EnTeam® Resource Manual for Educators

Educators strengthen students socially and academically by teaching with games that keep score of improvements in cooperative learning.

This manual is a collaborative effort by Ted Wohlfarth, Cindy Marston, Susan Kelly, Tom Evans, Liz Heitman, and other friends of EnTeam.

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Call 314.814.2000 for information about using this manual.

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Introduction

Although Dr. Jamal has been teaching chemistry in a low-income community for 12 years, he continually struggled to motivate his students to memorize the periodic table. Their failure to retain the basic facts hampered their ability to become efficient when balancing equations and in advanced work.*

He tried explaining that they would save time and earn better grades if they would memorize the table. He cajoled. He encouraged. A few students compiled, but many did not persist long enough to memorize the periodic table.

During a workshop on EnTeam Games, Dr. Jamal described his problem to the facilitator, Ted. The game that Dr. Jamal and Ted developed and tested – a win-win variation on the familiar win-lose game "concentration" – increased the number of students who memorized the periodic table. As the students played together, they helped each other learn. Teaching and learning became more enjoyable for students and Dr. Jamal – and test scores improved.

* Names in this manual have been changed for confidentiality. Many of the teachers are willing to share their experiences. Email info@enteam.org if you would like more information.

Purpose of this Manual

This manual provides educators with cooperative-learning structures – called EnTeam Games – that strengthen students socially and academically. Educators use EnTeam Games as formative assessments that empower students to gather data on their own progress and collaborate to help each other master curricular content. When they play EnTeam Games, students are intrinsically motivated to work together in a series of attempts to improve their scores. If they can't win together, they lose together.

Collaborative academic games draw on students' instinct to socialize and focus that interpersonal energy on learning objectives. Positive peer pressure pushes students to master academics – no one wants to look ignorant in the eyes of their friends. By keeping score of improvements in academic achievement, students see objective evidence of whether their strategies for

learning are working. Because the process is collaborative, they feel the satisfaction that comes from helping each other improve.

The defining element of these structures is that they use a scoring process to quantify how much students improve in their work together. By structuring the learning process as collaborative games, students become engaged in experimenting with alternative learning strategies.

The purpose of scoring performances is to give students objective data on their improvement in joint efforts with other learners. When students use their own data to develop strategies for increasing their success, they strengthen their higher-order thinking skills. They also become invested in the process of self-reflections and planning how to improve themselves. Having fun and building collaborative relationships makes the process joyful, challenging, messy, and invigorating. Students and educators want to come to a school where they have fun with friends.

By playing the games in this manual, students and educators discover answers to essential questions:

How can educators teach so students strive to help each other learn?

What nurtures students' capacity to accomplish goals together?

What encourages students discover the value of those who are different?

Using this Manual

Educators – including parents, teachers, and coaches – use this manual is to strengthen students' social and academic capacity to learn collaboratively. The simplest way to introduce measurement of improvements in collaborative performances is to start with *group-best scoring* in a physical game such as *Keep on Track*. Once students make the mental shift from win-lose scoring to win-win scoring and buy-in to testing their own strategies for improving scores, a logical next step is to insert curricular content into correlative academic games such as *Keep on Topic*. After using these simple games, the next step is tracking individual contribution to group efforts on the EnTeam score sheets. For example, *Bounce on the Ceiling* is an introductory game that can be scored on EnTeam score sheets as can its correlative academic game: *Bouncing Ideas Around*.

For those educators who would like support, EnTeam facilitators conduct workshops with students and educators in classrooms (or other learning environments) to demonstrate ways to use EnTeam Games to strengthen students socially and academically.

The appendix provides background on EnTeam Organization and additional resources.

Evidence base for teaching with EnTeam Games

Using academic games in the classroom is associated with a 20 percentile point gain in student achievement.
Robert Marzano, 2010

Three criteria are used to assess the impact of teaching with EnTeam Games:

1. **Academic achievement** as measured by increases in the percent of students scoring at proficient levels on summative assessments.
2. **Cooperative behavior** as measured by increases in the school attendance rates and the number of completed assignments and the decline in discipline referrals.
3. **School climate** as measured through surveys showing decreases in unresolved conflicts and increases in levels of friendship, emotional safety, and respect.

Quantitative research by independent evaluators has assessed the impact of teaching with EnTeam Games and found statistically significant increase in academic achievement as measured by improvement in standardized test scores for students in eighth-grade science (Gilsinan & Wodzak, 2015).

Qualitative research conducted with teachers of STEM subjects in secondary schools – including those serving low-income, racially segregated communities in St. Louis – has also shown gains in academic achievement as well as reductions in discipline issues (Wohlfarth, 2017).

While additional research will always be desirable to document the effects of EnTeam Games, it is not surprising that preliminary research shows that test scores increase, school climate improves, and behavior issues decline since EnTeam Games are a direct application of the principles of cooperative learning.

The evidence that cooperative learning is effective is well documented – although cooperative learning is often misused and confused with group work (Abrami, Poulsen, & Chambers, 2004; Gillies, 2007; Gillies & Boyle, 2010; Johnson & Johnson, 2013, 1998; Johnson, Maruyama, Johnson, Nelson, & Skon, 1981). Two of the main reasons that teachers object to cooperative learning – the free-rider problem and time constraints – are mitigated by EnTeam structures: no one gets a free ride when individual contribution to the collective effort is on the score sheet. The time needed to plan cooperative learning lessons is reduced by the EnTeam game templates.

Research on academic games also shows substantial benefits from teaching with games (Haystead & Marzano, 2009; Ke & Grabowski, 2007; Killingsworth, Clark, & Adams, 2015; Vesperman & Clark, 2016). One of the explanations for the pedagogical benefits of games is immediate feedback that is objective and actionable by students (Garris, Ahlers, & Driskell, 2002).

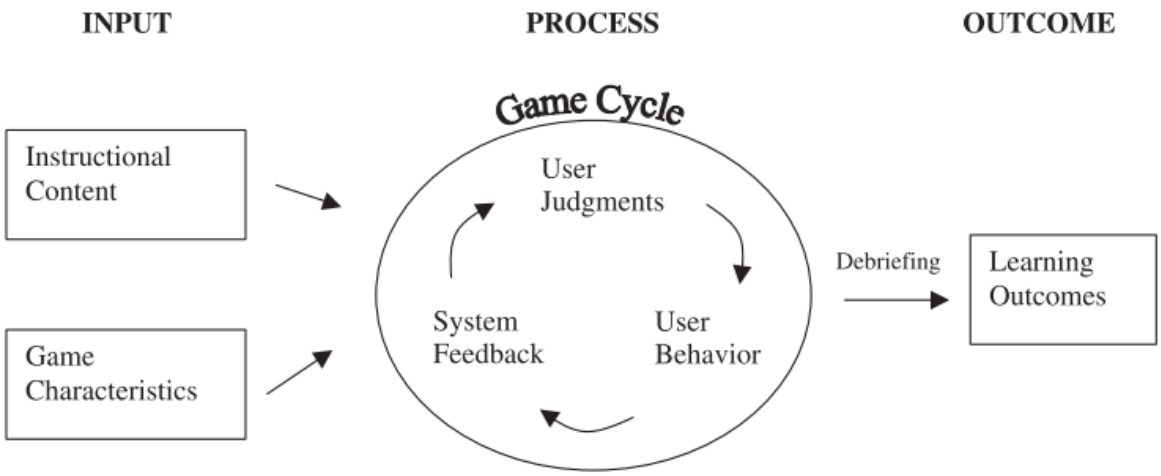

Figure 1. Model of learning through games (Garris et al., 2002)

The diagram above starts with curricular content in a game format. As they play the game, students earn scores which – if the scoring system is designed well – give immediate information about the quality of their performance. Through repeated play and thoughtful debriefing, students can self-assess whether change is needed before mastery can be achieved (Garris et al., 2002).

EnTeam educational games are grounded in game theory and social interdependence theory, both theories have been extensively researched and found to impact academic learning and social development (Gummerum, Hanoch, & Keller, 2008; Johnson & Johnson, 2005):

Game theory -- the study of outcomes in situations where one player's actions impact the choices available to another player -- originated in the middle of the twentieth century by economists and mathematicians. Game theory deepens the concepts of win/win and win/lose outcomes because game theory includes processes for measuring cooperative performances.

Social interdependence theory is the foundation for cooperative learning and focuses on the differences among positive interdependence, negative interdependence, and no interdependence. According to social interdependence theory, the essential ingredients for cooperative situations include mutual assistance, exchange of needed resources, and trust (Johnson & Johnson, 2005).

How to Use EnTeam Games

EnTeam Games are a form of collaborative learning that includes the measurement of improvements in cooperative performance. Social-emotional development and academic content are united in EnTeam Games because the students must help each other learn the content.

Educators use EnTeam Games to engage students in helping each other learn. The results of teaching with EnTeam Game are that students immerse in academic content while they build social skills.

Teachers like the effects: engaged students who are productive – albeit, often noisy and rambunctious. Teaching is more enjoyable because the students are on task, and they assess their own progress using the game score. Students value the immediate feedback provided by the game scores because the data are objective and are presented in the context of supportive social relationships in which students win or lose together.

Steps for using EnTeam Games as tools for teaching and learning

A. Start with the learning objectives

Educators should not use games unless the games serve the learning objectives and improve the learning environment. To ensure that EnTeam Games serve your objectives for the students, begin with questions about the lesson:

1. What upcoming topic has content that your students could learn together?
2. What are the learning objectives for that topic?
3. How would you assess mastery of the learning objectives?
4. Which thinking skills will be most important for mastering the learning objectives?
5. What behavioral objectives would like the students to exhibit as they learn?
6. How are you assess mastery of the behavioral objectives?
7. What assistance or support would help you facilitate the learning process?

If you jot down answers to these questions, your notes will help you pick the right game and help you facilitate the debriefing of the game effectively.

B. Identify the thinking skills

Before selecting a game that you will use to help students master the learning objective, consider the thinking skills the students need to use to understand the content. You can use Blooms taxonomy is a structure for categorizing thinking skills.

<table>
<tr><td rowspan="2">Knowledge of the facts

Who? What? Where? When? How? Why?</td><td>Comprehension
Understand the facts in the context of the experience.

Compare, contrast, explain, extend, summarize</td><td>Analysis
Take apart
Probe the causes and motives behind the facts in the current context and how they might be generalized to other contexts.</td><td rowspan="2">Evaluation
Draw conclusions and make choices using the principles identified in analysis and synthesis.

Appraise, award, decide, choose, interpret, prioritize, value, devalue, conclude</td></tr>
<tr><td>Application
Use the comprehension of the facts in similar situations.

Apply, build, experiment, interview, organize</td><td>Synthesis
Put together with improvements
Discover patterns and new applications or solutions by connecting facts and principles to a broader context.
Reason inductively from the particular to the general, and deductively from the general to new formations.</td></tr>
<tr><td colspan="2">Specific context</td><td colspan="2">General context and perspective</td></tr>
</table>

Adapted from Benjamin Bloom, et.al. *Taxonomy of Educational Objectives: The Classification of Educational Goals: Handbook I, Cognitive Domain,* 1956

C. Select a game Start with *Why* – not *What*

Excite interest with an introduction or *set induction* – a hook for engaging students and challenging them to master the learning objective. The introduction should help students see the relevance of the work ahead and builds their desire to be successful.

The introduction before the game should be brief – just enough to ignite the imagination and excite the passion for learning:

- Tell a story related to the objective
- Describe how the topic excites you
- Read a relevant poem
- Cite research on the objective
- Pose thought provoking questions
- Ask leading questions
- Show a relevant video clip

You know the introduction is effective if the students having a clear sense of the challenge ahead and the enthusiasm needed to overcome the challenge.

D. Select a game that fits

What will help the students engage with the content you teach? With some content, you can use a game to introduce the subject. You can use games to reinforce the content or to review the content. whether you will teach the curricular content before or after the game. One approach is to

teach the students about the subject before you ask them to apply it. Another approach is to let the students try to apply the content as they play the game.

Select an EnTeam Game that applies the thinking skills your students must use to master your learning objectives. Usually, your students will play the game after you introduce the curricular content needed to play the academic game. Sometimes, try playing the game before you teach the content – see if the students become receptive to learning the content so they can improve their game scores.

Sample Games

Below are a few EnTeam Games for you to consider. Additional EnTeam Games are available on the EnTeam Game Portal.

Reading comprehension

For example, consider the following games when your topic requires reading content and answering questions about that content:

- If the questions require identifying ideas in the content, then you could use games such as *Catch* (or *Net Catch*) and *Catching On*.
- If the questions require deeper analysis of the ideas in the content, then you could use *Talking Dominoes* and *Talking Idea*.
- If the questions require creative thinking and synthesize ideas in the content, then you could use *House of Cards* and *House of Ideas*.

Memorizing facts or learning vocabulary

If your learning objectives require mastery of basic facts or new terminology, vocabulary games can help:

- Students help each other master vocabulary when teachers use modified versions of the *Frayer model*.
- Another approach for memorizing terms and facts is a cooperative version of concentration such as the *Periodic Table Concentration*.

Following a procedure or mastering an algorithm

If the learning objective requires that the students follow steps to solve a problem or complete a procedure, then consider the following games:

- When students need practice and repetition with a procedure, consider a concept game such as *Keep on Track* and a version of *Keep on Topic* such as *Too Many Problems to Solve*.
- When students grasp the procedure and are ready to reflect on it, consider using *Partners Produce Pairs of Problems*.
- You can combine games into a project. For example, *Robot Control Team* challenges students to apply linear functions with basic physics.

Writing games

Although writing is solo work, friends can be supportive:

- Peer-editing makes rewriting into a collaborative game.
- Peer-interviewing can boost creativity.

Creating your own collaborative games

Of course, you are not limited to existent games. You can always make your own. If you want collaborative games that keep score of improvements in cooperation, here are the steps we use at EnTeam Organization:

1. Start with your learning objective.
2. Identify a goal that is objectively measurable and that can be achieved by working together.
3. Find a cooperative opportunity – a process that enables students to accomplish more by working together than by working independently or working against each other.
4. Identify an impersonal opponent (such as time or distance or other impediment) that players must overcome to succeed together.
5. Arrange the measurement into a scoring process.
6. Define the least-complex rules for keeping the people engaged in reaching the goal.
7. Test it and refine it.

Since the collaborative-game approach requires reflection and repetition, the time for each game must be kept short. Otherwise, the students do not have the opportunity to gather data, reflect on the experience, and develop strategies for improving their performance.

The learning cycle requires patience and persistence.

Characteristics of an effective game

- The students are vigorously engaged in activities that relate to the learning objectives.
- The score measures the progress student are making toward mastering the curricular content.
- No one can hide their performance or get a free ride without doing their part of the work.
- Students and teachers see immediate feedback on the quality of student performance.
- Students have time to reflect and improve their performance before each new round of play.
- The teacher has time to help the students who are struggling.
- Students do most of the talking.
- Students take ownership of their work and responsibility for the supporting one another in mastering the curriculum.
- The rules for the game are clear and concise.
- Students can apply the principles of the subject they are learning outside of the game.

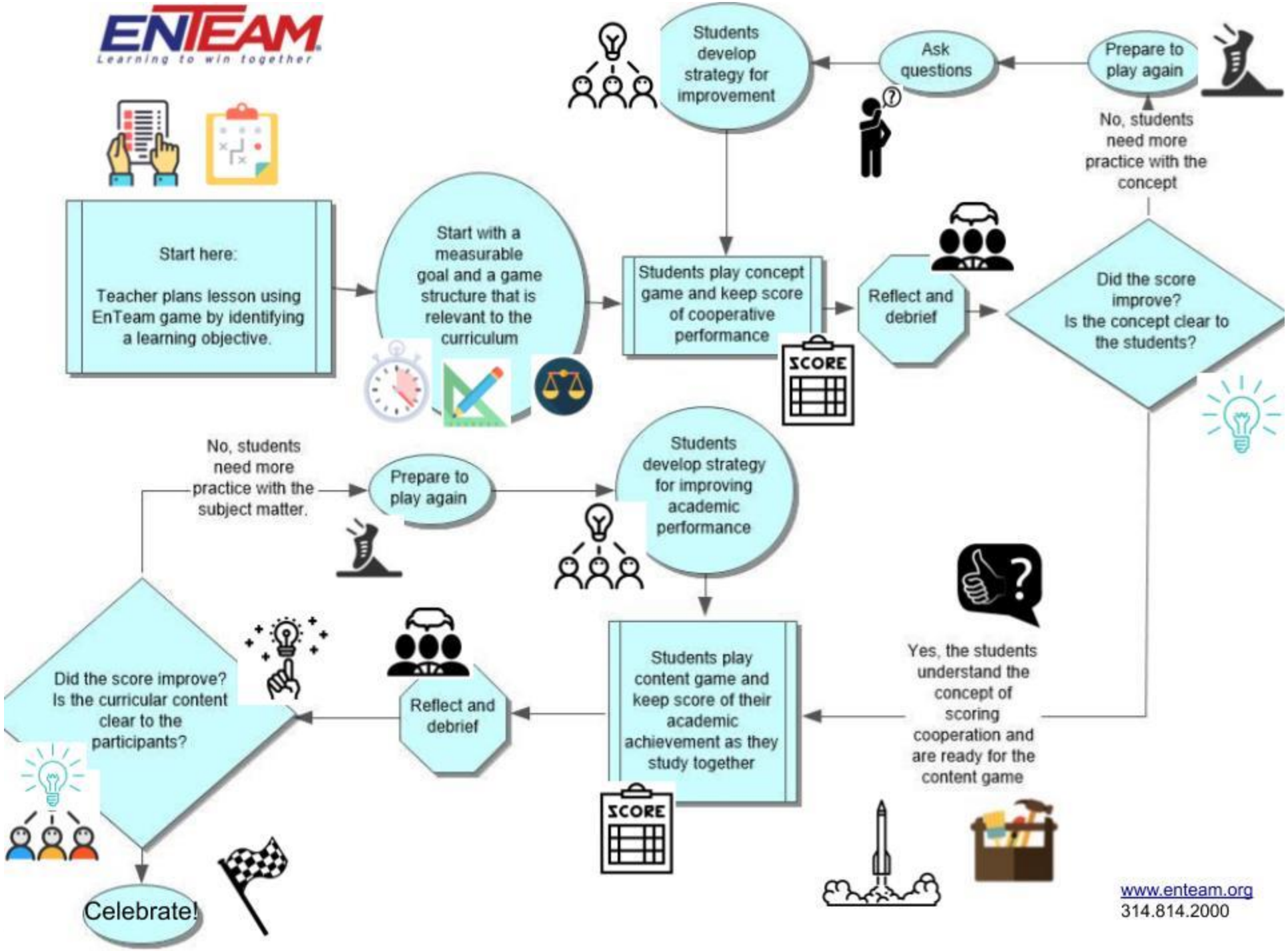
ENTEAM
Learning to win together
Start here:
Teacher plans lesson using EnTeam game by identifying a learning objective.
Start with a measurable goal and a game structure that is relevant to the curriculum
Students play concept game and keep score of cooperative performance
SCORE
Reflect and debrief
Did the score improve? Is the concept clear to the students?
No, students need more practice with the concept
Prepare to play again
Ask questions
Students develop strategy for improvement
Yes, the students understand the concept of scoring cooperation and are ready for the content game
Students play content game and keep score of their academic achievement as they study together
SCORE
Reflect and debrief
Did the score improve? Is the curricular content clear to the participants?
No, students need more practice with the subject matter.
Prepare to play again
Students develop strategy for improving academic performance
Celebrate!
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Figure 2 Flowchart for using EnTeam educational games

The flowchart above traces the steps for using **concept games** before using **content games** as described in the following outline:

- **Concept games** introduce the elements of positive interdependence – win-win or lose-lose relationships – before teaching lessons with cooperative-learning structures.
    - Concept games do **not** contain academic content – content games are academic.
    - Most of the concept games are quick (less than five minutes per game).
    - The scoring process with reflection between games nurtures collaborative skills.
        - Different concept games quantify improvement in specific mental skills such as listening, abstracting, creative thinking, and attaining goals with a group.
        - When they play EnTeam games, students strengthen their ability to give constructive feedback, resolve conflicts peacefully, and apply other aspects of social-emotional learning.
        - The EnTeam process encourages reflection on memorization, comprehension, application, analysis, synthesis, and evaluation.
    - Each concept game is followed by reflection time and may include structured debriefing.
        - Educators ask questions.
        - Students develop their own strategies for improving their scores the next time they play.
    - Concept games prepare students to play content games.
- **Content games** give the students the opportunity to apply the skills developed in a concept game to the mastery of academic content.
    - The scoring processes used in content games can measure improvements in the mastery of academic subjects in a series of rounds of play.
        - Content games can be adapted to virtually any subject area: mathematics, physical sciences, social sciences, language arts, physical education, music, visual arts.
        - Content games are generic structures into which educators can insert their academic content.
        - Each generic structure challenges players to use thinking skills that are relevant to their subject area.
            - Educators select from an array of different game structures based on the thinking skills required of the learners such as memorization, comprehension, application, analysis, evaluation, or synthesis.
    - Most of the content games can be played in a short time.
        - The same game is played multiple times.
        - Repetition strengthens mastery of content and allows students to assess the impact of alternative learning strategies for each student individually.

        - The EnTeam scoring process quantifies the individual contribution of each student to the collaborative learning objectives.
    - After each play of a content game, students and educators take time for reflection.
        - Often, the reflections time includes structured debriefing.
            - Educators ask questions.
            - Students develop their own strategies for improving their scores the next time they play
    - Content games can be used at various stages in the learning process:
        - Introducing new academic material;
        - Mastering academic content that is being studied currently;
        - Reviewing academic content that was previously taught.

The impact of teaching with EnTeam Games is seen in reduced conflict as well as increased academic achievement. For example, in 2016, Laurice was in trouble for bullying Sarah in a science class in St. Louis County, Missouri. Sarah's parents called the principal; he started visiting the class. The problem persisted for most of the semester. The principal was considering whether to expel Laurice. The teacher, who was learning to use EnTeam games, grouped the students so Laurice and Sarah played House of Cards and House of Ideas on the same team and used the EnTeam process for reflection. The result was that the bullying stopped, and Laurice and Sarah developed a peaceful relationship.

By having fun together, players with differences can develop relationships and build bridges that enable them to be productive and peaceful.

Explanation of EnTeam scoring process

The defining element of EnTeam games is that the players keep score based on the changes in their performance together. If their performances improve each time they play, the players are winning together. If the score does not improve, they lose together.

EnTeam games use two approaches to keeping score of cooperative performance: (1) *group-best* scoring and (2) *all-for-one* scoring.

Group-best scoring. Group-best scoring compares measurable performance achieved by players in a series of events. The purpose for using group-best scoring is to encourage collaboration among people such as students in a classroom. With group-best scoring, the contribution of any one individual to the score is difficult to discern, usually.

For example, a teacher could use group best scoring in a math lesson by adding up the total number of problems that students in a class solved correctly in five minutes and comparing that first score to the number of problems solved in a subsequent five-minute period. The advantage of using group-best scoring is that players can see whether they are winning together – where winning is perceived as improving the total of the combined scores and the chances of winning are enhanced by players helping each other achieve their shared goal. This math activity would be considered an EnTeam game only if the following conditions are met:

- The type of problems and the level of difficulty are the same each time the group plays.
- The rules and procedures are unchanged each time the group plays.
- The group has time between each event to plan together how they will improve their score.
- After each game, players have an opportunity to debrief their success or failure and plan next steps.

When conflicts arise in the course of the games, a teacher who is prepared can engage the students in moral reasoning

The result of group-best scoring is that the participants see whether they are improving as a collective. They do not gain any numerical data on the individual performance of person in the group. To see numerical data on individual performance in a collaborative activity, they can use All-for-One scoring which requires EnTeam score sheets.

All-for-One scoring. To go deeper into measuring cooperation, teachers can use *All-for-One scoring* which gives individual performance statistics in cooperative learning activities. As

students develop their skills in bring out the best in each other, their scores on EnTeam score sheets tend to increase. Notice that numerical scores are a function of more than cooperative performance. The scores vary based on three factors: skill in the activity, willingness to use the skill. And random chance

EnTeam score sheets. Two types of EnTeam score sheets for measuring cooperation are shown below: teams of four and teams of three.

Scorecard for an EnTeam Match with Four Playing Date_____ Location _____

Activity _____ Group _____ Facilitator _____

Names→	A	B	C	D	Team Scores
Game 1a					Four scores from games 1&2
Game 1b					
Game 2a					Four scores from games 3&4
Game 2b					
Game 3a					Four scores from games 5&6
Game 3b					
Individual Scores Add down columns					Match Score

Figure 3. Score sheet for four players or four teams

Scorecard for an EnTeam Match with Three Playing Date_____

Activity _____ Group _____ Facilitator _____

Names→	A	B	C	Total Team Score Add the 2 scores after each of the 3 games.
Game 1			solo	
Game 2		solo		
Game 3	solo			
Individual Scores Add down the columns				Match Score

Figure 4. Score sheet for three players or three teams

The two figures above show blank score sheets that can be used to measure cooperative performance. Individual statistics in the bottom row show how well each student (or team) performed when working with each of the other participants. The scores on the right-hand column show the progress of cooperative performance between games. The match scores in the lower right-hand corner show the total scores in cooperative performance achieved during the entire match.

Not all games are amenable to All-for-One scoring. For example, *Keep on Track* is only suitable for group-best scoring because players are not consistently paired during the game. Games such as Domino Dialog can be scored with either All-for-One scoring or group-best scoring. Use All-for-One score sheets when the individual data are worth the extra time required to fill out the score sheets.

Steps for using the score sheets:

- Select the appropriate score sheet depending on the number of people on each team.
- Enter the names of the players in the boxes at the top of the score sheet.
- After each game, partners have the same score. Their scores are identical because they were working together, and therefore **they both own all the points scored by their joint effort**.
- After each game the players record their score and sum across the row and rotate partners.
- At the end of the match, the players have three scores.
  - Each person/team has an individual score. (bottom row)
  - Each round of play has a collective score. (right-hand column)
  - The entire group has a match score. (lower-right corner total)

Debriefing EnTeam Games

Any group that is too busy to reflect on its work is too busy to improve.

(Garmston & Wellman, 1999, p.60)

Learning requires reflection. EnTeam Game are short – so there is time for debriefing and reflection between games.

Failures offer powerful opportunities for discovery if the learning environment is safe.

Show the value of mistakes by encouraging students to find the lessons they contain.

By thoughtful debriefing questions, educators encourage students to reflect and reason inductively from the event to broader perspectives and principles.

The debrief process, at its best, includes each part of Bloom's taxonomy:

<table>
<tr><td rowspan="2">Knowledge of the facts

Who? What? Where? When? How? Why?</td><td>Comprehension
Understand the facts in the context of the experience.

Compare, contrast, explain, extend, summarize</td><td>Analysis
Take apart
Probe the causes and motives behind the facts in the current context and how they might be generalized to other contexts.</td><td rowspan="2">Evaluation
Draw conclusions and make choices using the principles identified in analysis and synthesis.

Appraise, award, decide, choose, interpret, prioritize, value, devalue, conclude</td></tr>
<tr><td>Application
Use the comprehension of the facts in similar situations.

Apply, build, experiment, interview, organize</td><td>Synthesis
Put together with improvements
Discover patterns and new applications or solutions by connecting facts and principles to a broader context.
Reason inductively from the particular to the general, and deductively from the general to new formations.</td></tr>
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</table>

Adapted from Benjamin Bloom, et.al. *Taxonomy of Educational Objectives: The Classification of Educational Goals: Handbook I, Cognitive Domain,* 1956

Open-ended questions lead players through Bloom's taxonomy:

1. What happened? *[Knowledge, Comprehension, Application]*
   - What are the facts in this experience?

- How do you compare and contrast the facts in this experience?

2. So what? *[Analysis and Evaluation]*
   - What lessons did you learn from this experience?
   - What are some of the principles at work in this experience?
   - Given this experience, what implications do you see for your choices or decisions?
3. Now what? *[Synthesis]*
   - In the future, how can you use the lessons learned to improve your performance?
   - How do the principles in this experience apply in other situations?

See the graphic organizer for debriefing in the appendix.

Examples of EnTeam Games

EnTeam Games are cooperative-learning structures with scoring processes that quantify improvements in collaborative performances.

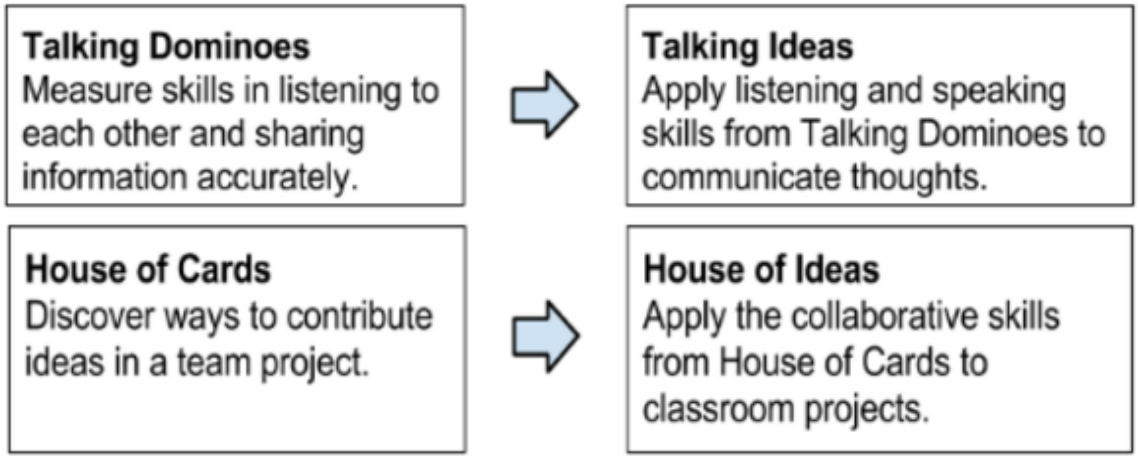
As explained above, there are two types of EnTeam Games: **Concept** games and **Content** games. Both types of EnTeam Games keep score of improvements of cooperative performance and challenge players to win together.

- **Concept** games teach students how to cooperative thinking skills that they can apply in a variety of settings and experiences.

- **Content** games are cooperative-learning structures that apply the thinking skills developed in concept games to content-specific areas such as math, vocabulary, language development, science, etc.

Two pairs of EnTeam Game are explained in detail below, and appendix A has more EnTeam Game.

Two CONCEPT games | **Two of the CONTENT games**



Facilitator Instructions for Talking Dominoes

(This is a paired Concept exercise that precedes *Talking Ideas*)

Summary of Exercise

In Talking Dominoes, students listen to each other and track their ability to see things from another person's point of view.

After the two-minute game, students have a score of their performance hearing and understanding one another. After each game, players are allowed time to develop strategies and strengthen their ability to describe, listen, ask clarifying questions, share ideas, and give constructive feedback.

Use this Concept Exercise to…

Improve listening skills, giving constructive feedback, explaining procedures, developing skills in asking questions.

			
People	Prep time	Time	Scoring
Groups of 3	10 min	40 min	Either *Group Best* or *All-for-One*

A match consists of 3 rounds if you use All-for-One scoring or 2 rounds with group best scoring.

Prep -------- Read over the Objective, Equipment Needed, Rules, Steps and Debrief sections to be sure you understand the entire process.

Objective -------- Communicate a pattern of dominoes from the sender to the receiver accurately as many times as possible in 2 minutes.

The objective of a round is to beat the previous best score.
Add each teams' score after each round.

The group loses if the total does not improve. The group wins if they can improve the total score.

Equipment Needed for each team of students

- 8 dominoes consisting of 4 pairs of matching dominoes
- 2 Dividers (such as file folders standing on edge)

- 1 Score Sheet (3-person for teams of 3, 4-person for teams of 4 if you use All-for-One scoring)
- 1 two-minute timer (on most phones)

Rules -------- There are no limits to your strategy other than the following rules.

1. The time limit is 2 minutes
2. The Sender and Receiver can talk with each other, but no one else.
3. Participants may not look at each other's dominoes until the exercise is over. (No pictures on cell phones either--nice try!)

Sequence -------- assuming you are using score sheets and All-for-One scoring

- Students separate the dominoes so that each partner has 4 distinct dominoes and both students have matching dominoes.
- Students fill out the Score Sheets with their names and assign a letter to each student. (e.g. Person A, Person B,…etc.)
- One student will be designated the "Sender" and one the "Receiver" for the first round.

Conducting the activity

- The Sender should arrange the dominoes in any pattern (such as **T** or **L**).

  ✓ Make sure that you use all 4 dominoes and that all dots are in view.
- Once the pattern is set, the Sender must not touch the dominoes.
- When the clock starts, the Sender will explain the pattern to the Receiver and the Receiver will try to make the same pattern.

  ✓ If the students finish before the time is up, they record their score and try to earn more points using a completely different pattern. Send and receive as many accurate patterns as possible within the time limit.

DURING the activity

Step 1 (5 minutes) As a group, read and clarify the rules. NOTE: It is important to read the rules together and clarify any questions so that effort is not "wasted" in the first round by breaking a rule.

Step 2 (2-5 minutes, depending on your time frame) Allow teams to strategize.

Step 3 (2 minutes, timed) Play Round 1: Each team tests their plan by creating a practice pattern and sending it from one participant to the other.

Step 4 (3 minutes, depending on the number of the teams) Each team tallies their score, reports their score to the group, and the cumulative score is tallied (on a whiteboard, if possible, so that all may see).

Score: A team's score is 1 point for every domino in the correct position. You do not have to get all four dominoes correct. If only 1, 2, or 3 out of 4 are correct, tally the 1, 2 or 3 points and try to complete another pattern before the time runs out.

Step 5 (3 minutes, approx) Each team has the opportunity to discuss and strategize, but very important to the EnTeam process is to also allow sharing of suggestions for improving scores among teams (i.e., share strategies with the group). NOTE: This helps move us from a competitive mindset (don't share strategies) to a mindset of collaboration (share and we all improve/win).

Step 6 (2 minutes, timed) Round 2: Each team employs strategies discussed and tries again.

Step 7 (2-3 minutes, depending on the number of the teams) As before, each team tallies their score and reports their score to the group. The cumulative score is tallied (on a visible space like a whiteboard, so that all may see).
Did you improve on the score from round 1?

Debriefing Step 8 (15-30 minutes, depending on the objectives, the size of the teams, and the method of debriefing. Debriefing content exercises may be substantially longer if the participants write their answers to the three questions (what? so what did we learn? now what?), and if they make presentations, that will add additional time.)

You can conduct a third round if time, or proceed to the debriefing session.

Debriefing is essential to the ***EnTeam***® process. Debriefing is where participants connect the ***EnTeam***® activity to their lives. There are several options for facilitating the debriefing process and however it is done, it is important to answer the following questions.

See the INSTRUCTIONS and this debriefing form in appendix B for complete information, which includes all of the questions below:

What happened?		
What did you see? What did you hear? What was the score?	What worked? What didn't work?	How did people feel? What issue(s) came up? What issue(s) remain?

So, what did we learn?		
What did we learn?	How does this experience relate to other experiences?	Why are we doing this? How is it relevant to us?
Now what?		
How could we improve our score in this activity?	How can we work together better?	How could we apply these ideas elsewhere?

Notes

- To compare patterns, it is easiest for the students if they are sitting side by side (because the dominoes will be oriented the same way). But that makes it harder to set up the screen to block the view of both sets of dominoes.

- You may want to give extra time for your students to figure out a common language. Or you may want to talk about keywords ahead of time ("vertical," "horizontal," "diagonal," "parallel," and "perpendicular") to enable the students to be more exact in their wording. Or you may want to let them figure it out and share as a strategy.

- In groups of three, the 3rd participant needs to keep quiet and let his or her team figure out a strategy for themselves. This is harder than it sounds, and the 3rd participant needs to be encouraged to analyze how the exercise is going and come up with ideas to discuss during the debriefing process. Remember, the end goal of this exercise is not to simply match up patterns of dominoes, but to think metacognitively about the process of communicating an idea clearly, effectively, and efficiently. After the game, your students should be more effective communicators, not just people who are good at making patterns. Don't get too caught up in the minutia of the exercise, stay focused on the larger picture. This way, there will be an easier transition to the content exercise in your academic area.

See the Appendix for a one page handout for participants - Rules for Talking Dominoes

Facilitator's Instructions for Talking Ideas

Talking Ideas (one page)

(This is a paired *Content* exercise that follows *Talking Dominos*)

Summary of Exercise

Extend the strategies developed in *Talking Dominoes* to strengthen academic achievement by practicing answering open-ended questions.

			
People	Prep time	Time	Scoring
Groups of 3 or 4	20min	40 min	Either *Group Best* or *All-for-One*

Prep

After you read over the entire list of objectives, equipment needed, rules, steps and debrief sections and you understand the process, you are ready to prepare your questions.

Prepare a list of open-ended questions focused on your learning objectives. (If you want students to work on closed end questions, use a different game such as Concentration or Too Many Problems to Solve.)

Writing out three pairs of questions ahead of time is mandatory. Without them you cannot conduct the exercise. Make the questions visible to all or distribute them to each group.

Of course, the questions you use will relate to your learning objectives. Below are sample questions with two questions per round.

Sample questions for introducing the concept of variables:

Give each student a different variable (such as basketball scores, temperatures on thermometer, speed of a drone, height of trees, etc.)
Partners interview each other and write the other person's answer to these questions:

1. What variables are positively related with your variable? [This is two questions because each partner has a different variable.]
   Positively related variables go up and down together.
2. What variables are negatively related with your variable?
   Negatively related variables go up and down in the opposite direction.

3. What variables have zero relation with your variable?
Variables with zero relation do not change in a pattern.

One way to score this game is one point for each pair of correct examples with different authors. For example, if partner A writes 5 correct examples dictated by partner B, and B writes 2 correct examples dictated by A, then the score for A and B is 2 (because there are 2 pairs of answers).

Sample questions for educators preparing for a new semester:

Questions

1a: How can we build communication, trust, and teamwork within each classroom and within each learning environments?
1b: What could block trust communication, trust, and teamwork within a classroom and within other learning environments?

2a: How can we build communication, trust, and teamwork between different learning environments?
2b: What could block trust communication, trust, and teamwork between different learning environments?

3a: How can we practice school-wide improvement throughout the school year?
3b: What could block school-wide improvement throughout the school year?

Each person writes at least one answer with enough detail that an outsider can understand the ideas in a set time (such as two minutes).

Structure

Each team has either 3 or 4 people. Collaborating partners answer single or paired questions together. Solo participant answers answer questions on his/ her own. No one is solo in teams of 4.

A match consists of 3 rounds.

Decide whether to score based on quantity only (brainstorm) or use a rubric that scores quality and quantity.

Add teams' scores after each round.

The group loses if the total does not improve. The group wins if they can improve the total score.

Rules (You can modify the rules to make the game serve your purposes and learning objectives.)

There are no limits to your strategy other than the following rules.

1. Only written answers count in the score.
2. Answers should be written as complete thoughts.
3. The interviewing partner may not add anything to what the interviewee says.
    a. The interviewer is only a reporter and recording ideas.
    b. The interviewer may ask leading questions but may not create the answer.

Scoring (You can modify the scoring to fit your purposes.)

Partners score one point for each pair of answers provided both partners write different answers to the question.
For example, if Partner A writes four answers and Partner B writes 1 answer, their score is one because they have only one pair of answers with two authors. Both partners have a score of one.
A solo participant scores one point for each answer to a solo question provided other rules are followed.

Assess your group's needs. Do you need to add a rubric for quality?

One possible sequence for facilitating the game:

Step 1 _____ (5 minutes)

As a group, read and clarify the rules. NOTE: It is important to read the rules together and clarify any questions so that effort is not "wasted" in the first round by breaking a rule.

Step 2 _____ (3 minutes, timed)

Allow teams to strategize. Read the questions and discuss them

Step 3 _____ (2 minutes, timed)
Round 1: Each team lists answers to the questions for the round that are relevant and unique. You can't just keep repeating the same answer. The goals is to develop solutions or advance an idea. Don't just get hung up on earning the highest score and allowing quality of answers to suffer.
One person is speaking and the other is writing their answers.

Step 4 _____ (3 minutes, depending on the number of the teams)

Each team tallies the number of pairs of answers from two different authors and reports their score to the group. The cumulative score is tallied (on a whiteboard, if possible, so that all may see).

Score:
This an outcome-driven exercise focused on quality. It can be scored, but make sure participants are focused on QUALITY, not just quantity.

Step 5 _____ (3 minutes)
Each team has the opportunity to discuss and strategize as a team, but very important to the EnTeam process is to allow sharing of suggestions for improving scores between teams (i.e., share strategies with the group). NOTE: This helps move us from competitive mindset (don't share strategies) to a mindset of collaboration (share and we all improve/win).

Step 6 _____ (2 minutes, timed)
Round 2: Each team employs strategies discussed, rotates partners within the team of 3 or 4 people, and answers the next question or set of questions.

Step 7 _____ (2-3 minutes, depending on the number of the teams)
As before, each pair within the team tallies their score in terms of the number of pairs of answers written by two different authors and reports their score to the group. The cumulative score is tallied (on a visible space like a whiteboard, so that all may see).
Did you improve on the score from round 1?

Debriefing

Step 8 _____ (15-30 minutes, depending on the objectives, the size of the teams, and the method of debriefing.)
Debriefing content exercises may be substantially longer if the participants write their answers to the three questions (what? so what? now what?)
If you have teams make presentations, obviously that will add additional time.

Debriefing is <u>essential</u> to learning.
Congratulations! You have finished the exercise.
Now, drive home the message by reflecting.

1. whole-group discussion
2. small-group discussion with the same small teams who just completed the exercise
3. individual reflection

See the INSTRUCTIONS and this debriefing graphic organizer for complete information, which includes all of the questions below:

What happened?		
What did you see? What did you hear? What was the score?	What worked? What didn't work?	How did people feel? What issue(s) came up? What issue(s) remain?
So, what did we learn?		
What did we learn?	How does this experience relate to other experiences?	Why are we doing this activity?
Now what?		
How could we improve our score in this activity?	How can we work together better?	How could we apply these ideas elsewhere?

Sample game with World History Questions

Before the game starts, teams have time to talk and plan, but they do not write until the clock starts.

Teams of 4 students: A, B, C, and D

Game 1

1. How did Diocletian and Constantine restore order and stability to the Roman Empire?
   - A interviews B; A writes what B says.
2. How do their approaches compare with the approaches to order and stability that are used in the USA?
   - D interviews C; D writes what C says.

Game 2

3. What became of the Roman Empire after it was divided into two parts?
   - C interviews A; C writes what A says.
4. What might happen to the USA if it was divided into two parts?
   - B interviews D; B writes what D says.

Game 3

5. What are examples of political unrest in the Roman Empire and how does it impact the Empire?
   - B&C decide who interviews and writes.
6. What are examples of political unrest in the USA and how does it impact the USA?
   - A&D decides who interviews and writes.

In teams of 3 students, one student works alone during each game:

- C answers question 2 in game 1
- B answers question 4 in game 2
- A answers question 6 in game 3

Rubric

Criteria	Oops=0	Almost=1	Great=2
Is the answer written neatly so you can read it?	The answer is written but illegible.	The answer can be read with difficulty.	The writing is clearly legible.
Is the answer a complete thought that answers the question?	The answer is not a complete sentence. It is only a word or phrase.	The answer is a sentence, but it does not answer the question fully.	The answer is a complete sentence that answers the question fully..
Does the answer include supporting evidence or logic?	The answer gives no reference, evidence, or source of support.	The answer gives only weak reference, evidence, or source of support.	The answer gives strong reference, evidence, or source of support.

Facilitator Instructions for House of Cards

(House of Cards is the concept exercise which precedes House of Ideas)

House of Cards is a twist on the countless other tower-building team exercises. In this hands-on exercise building a structure with index cards, individuals combine creative strategies to produce the tallest tower possible. As with all EnTeam exercises, the entire group wins or loses based on their ability to collaborate. The height of all towers is summed together.

Every team is free to copy, innovate, and implement strategies as they choose. Just as those who are struggling have a responsibility to ask for help, those who are achieving greater results have a responsibility to share best practices. If participants don't share information with others, the production level of all is hampered. The group can share strategies during debriefing in order to increase the collective output.

Use House of Cards to strengthen skills needed to…

- Align individual efforts toward a common goal.
- Create new solutions to existing problems.
- Agree on a solution when there are many possible options.
- Combine multiple solutions and techniques to form one plan of action.
- Develop skills needed to overcome challenges, test plans, and share ideas freely.

The primary difference between House of Cards and Talking Dominoes is that the latter requires players to listen and understand each other, but they do not have to combine their strategies to create a new structure. In House of Cards, the players need to collaborate in creating something that has not existed before.




People	Prep time	Time	Scoring
Groups of 3 or 4	10 min	40 min	Either *Group Best* or *All-for-One*

Prep -------- Read over the Objective, Equipment Needed, Rules, Steps and Debrief sections to be sure you understand the process.

Gather the cards in stacks of 4 and be prepared to distribute measuring tapes, rules, and score sheets.

Objective -------- Each team builds two towers of cards as tall as possible in two minutes. Each team has either 3 or 4 people. (Collaborating partners build one tower together. Solo participants build a separate tower alone using 8 cards; in teams of 4, no one is solo.)

A match consists of three rounds. The objective of a round is to beat your previous best score.

Add each team's score after each round.

The group (i.e., the entire group, not just individual teams) wins if they can improve the total score; the group loses if the total does not improve.

Equipment Needed --------

- In teams with 4 people on a team, each participant has 4 cards of a color different from their partner's.
- In teams with 3 people on the team, the solo participant has 8 white cards, and the partners each have 4 cards of a color different from their partner.

Rules -- There are no limits to your strategy other than the following rules.

1. You must start each round with your cards lying flat on the table.
2. You may not touch your partner's cards; no one may touch your cards except you.
3. You may fold or tear your cards as you choose. You may only use your index cards to build the tower; you may not use other materials.
4. The tower must stand on its own for at least 5 seconds without support while you measure it.
5. You do not have to wait until the end of the exercise to measure. "Measure early and measure often!"
6. If the tower falls or if you just want to, you may rebuild it.

During the exercise

- Step 1 (5 minutes)
  As a group, read and clarify the rules. NOTE: It is important to read the rules together and clarify any questions so that effort is not "wasted" in the first round by breaking a rule.
- Step 2 (2 minutes, timed)
  Allow teams to strategize.
- Step 3 (2 minutes, timed)
  Round 1: Each team tests their plan by building towers with their index cards.
- Step 4 (3 minutes, depending on the number of the teams)

Score: Each team tallies their score by measuring the height of their tower in centimeters and reports their score (rounded to whole numbers) to the group. Tally the cumulative score. This is now the benchmark score to beat.

▼ Subtract one centimeter for each time you touched your partner's cards.
▲ Add one point for each centimeter of your tower's height.

If you rebuild, only the tallest tower is scored within the time limit.

- Step 5 (3 minutes)
  Each team has the opportunity to discuss and strategize as a team, but very important to the EnTeam process is to also allow sharing of suggestions for improving scores between teams (i.e., share strategies with the group). NOTE: This helps move us from win-lose competition (don't share strategies) to a mindset of collaboration (share and we all improve/win). The opponents are not other people, but time, gravity, and achievement level.

Step 6 _____ (2 minutes, timed)
Round 2: Each team employs strategies discussed and tries again.

Step 7 _____ (2-3 minutes, depending on the number of the teams)
Each team measures their tower and reports their score to the group. Then the cumulative score is tallied.
Did you improve on the score from round 1?

Step 8 _____ (15 minutes, depending on the number of the teams)

You may conduct a third round if time, or proceed to the debriefing session.

Debriefing is the process to engage the participants in reflecting on what they have accomplished and generalizing from that specific learning experience to the larger issues.

As a result of debriefing, participants see more clearly the general principles involved. Debriefing is successful if the participants understand what they have done and why it is important.

"Any group that is too busy to reflect on its work is too busy to improve."

Garmston and Wellman, 1999 p.60
The Adaptive School: A Sourcebook for Developing Collaborative Groups

As facilitator, you have choices: whole-group discussion, small-group discussion, individual reflection.
If there was a team of 3 where one person built on their own:

- How did you like building on your own vs. in a pair?

- If you were to build the tower in isolation would you have performed as well as you did?

Were there any examples of moral hazard to discuss?

- Did anyone “sandbag” or intentionally build a shorter tower during the first round so they could beat it more easily later?
    - How does this affect your partner?
        - Will they strive to achieve more next time?
        - Are they thinking about the BEST solution or intentionally settling for less?
    - How does this impact the entire group when all scores are tallied together?
        - This does not push the group to try harder.
        - This “sets the bar low”
- Did anyone exaggerate about the height of their tower?
    - How does exaggerating your performance impact the rest of the group when all scores are summed together?
        - Does this make it more difficult to win as a community?
        - Are we trying to beat a false goal?
        - What happens when Olympic and professional athletes cheat?

Did anyone feel reluctant to share strategies?

- Why? Are you still in a win-lose mindset?
- Are you more willing to share when you realize the scores of all teams are summed together?
- If we are trying to improve collective achievement, who are you benefitting when you withhold strategies from other teams?

See Appendix for a one-page handout for participants - Rules for House of Cards.

House of Cards [Annotated Rule Sheet]

House of Cards Facilitator Guide

3"x5" cards are fine. Try out some other size if you like. The game was designed to use readily available materials.

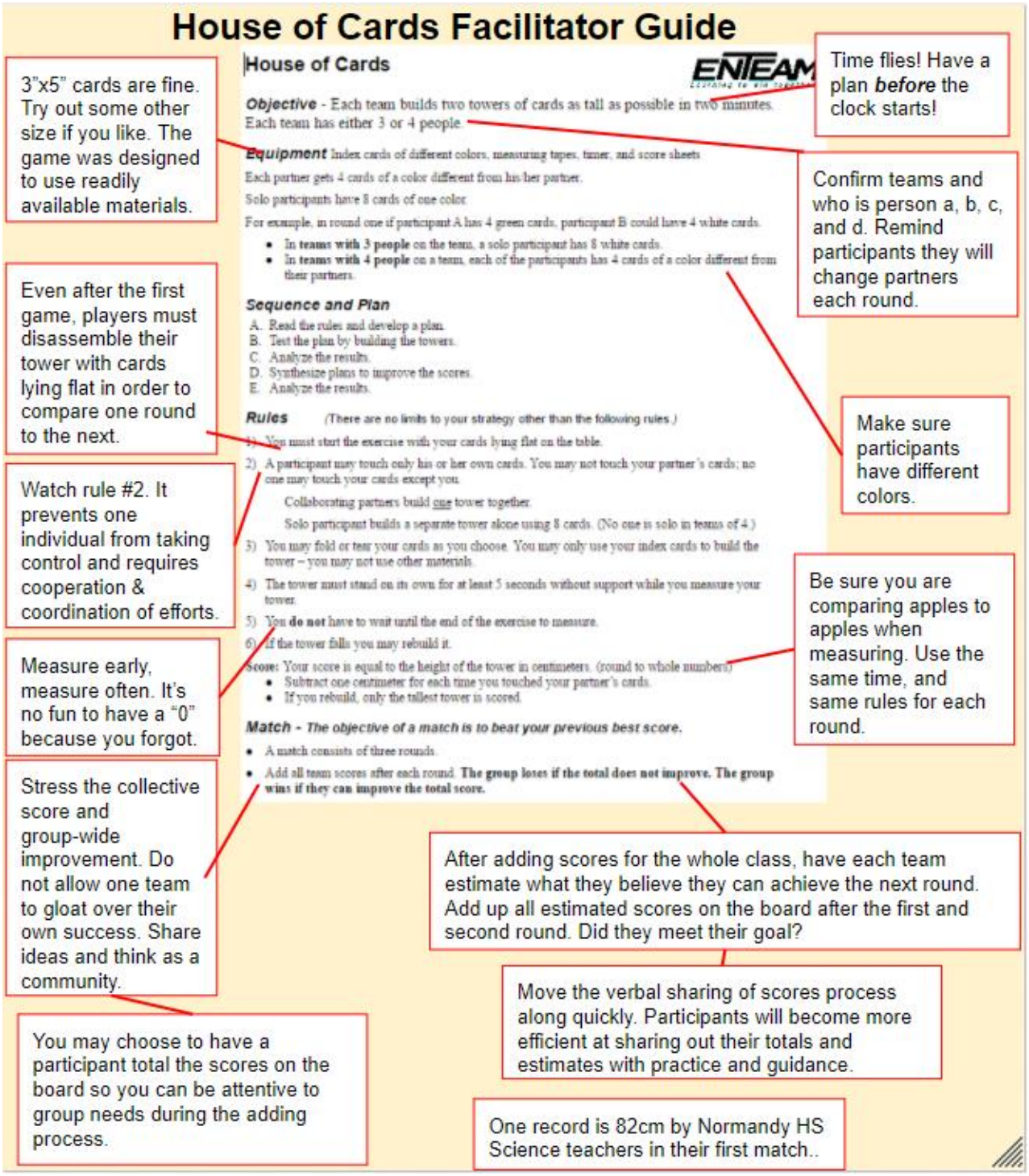
Even after the first game, players must disassemble their tower with cards lying flat in order to compare one round to the next.

Watch rule #2. It prevents one individual from taking control and requires cooperation & coordination of efforts.

Measure early, measure often. It's no fun to have a "0" because you forgot.

Stress the collective score and group-wide improvement. Do not allow one team to gloat over their own success. Share ideas and think as a community.

You may choose to have a participant total the scores on the board so you can be attentive to group needs during the adding process.



House of Cards

Objective - Each team builds two towers of cards as tall as possible in two minutes. Each team has either 3 or 4 people.

Equipment Index cards of different colors, measuring tapes, timer, and score sheets

Each partner gets 4 cards of a color different from his/her partner.

Solo participants have 8 cards of one color.

For example, in round one if participant A has 4 green cards, participant B could have 4 white cards.

- In **teams with 3 people** on the team, a solo participant has 8 white cards.
- In **teams with 4 people** on a team, each of the participants has 4 cards of a color different from their partners.

Sequence and Plan

A. Read the rules and develop a plan.
B. Test the plan by building the towers.
C. Analyze the results.
D. Synthesize plans to improve the scores.
E. Analyze the results.

Rules *(There are no limits to your strategy other than the following rules.)*

1) You must start the exercise with your cards lying flat on the table.
2) A participant may touch only his or her own cards. You may not touch your partner's cards; no one may touch your cards except you.
   Collaborating partners build one tower together.
   Solo participant builds a separate tower alone using 8 cards. (No one is solo in teams of 4.)
3) You may fold or tear your cards as you choose. You may only use your index cards to build the tower – you may not use other materials.
4) The tower must stand on its own for at least 5 seconds without support while you measure your tower.
5) You **do not** have to wait until the end of the exercise to measure.
6) If the tower falls you may rebuild it.

Score: Your score is equal to the height of the tower in centimeters. (round to whole numbers)

- Subtract one centimeter for each time you touched your partner's cards.
- If you rebuild, only the tallest tower is scored.

Match **- *The objective of a match is to beat your previous best score.***

- A match consists of three rounds.
- Add all team scores after each round. **The group loses if the total does not improve. The group wins if they can improve the total score.**

Time flies! Have a plan ***before*** the clock starts!

Confirm teams and who is person a, b, c, and d. Remind participants they will change partners each round.

Make sure participants have different colors.

Be sure you are comparing apples to apples when measuring. Use the same time, and same rules for each round.

After adding scores for the whole class, have each team estimate what they believe they can achieve the next round. Add up all estimated scores on the board after the first and second round. Did they meet their goal?

Move the verbal sharing of scores process along quickly. Participants will become more efficient at sharing out their totals and estimates with practice and guidance.

One record is 82cm by Normandy HS Science teachers in their first match..

Facilitator Instructions for House of Ideas

House of ideas (one page)

(This is a paired *Content* exercise that follows *House of Cards*)

Summary of Exercise

Build a "structure" for analyzing an issue or solving a problem by sharing and combining a series of ideas.

Use this Content Exercise to…

Go beyond listening to each other. Build skills needed to create something new and better than existed before. Combine ideas to improve the situation.

This content exercise challenges players to focus on a singular objective and list steps for analyzing an issue or creating a solution. Use this exercise to capture ideas and unite the goals of your team while having fun.

People

Groups of 3 or 4

Prep time

20min

Time

40 min

Scoring

Either *Group Best* or *All-for-One*

Prep

Read over the entire list of Objectives, Equipment Needed, Rules, Steps and Debrief sections to be sure you understand the entire process before you begin.

Identify an aspect of your learning objectives that requires students to analyze a situation, evaluate a condition/outcome, or synthesize ideas to create and explanation or theory. List a series of questions that the students could use as a framework for approaching the analysis, evaluation, or synthesis.

For example, if the learning objective is to synthesize what could have been done to prevent the civil war, then the game could be structured by having teams of students work in pairs (or triads) to answer a series of questions such as:

1. What information would we need to gather about the causes of the civil war?

2. Where could we find that information?
3. How would we organize the information that we gather?
4. What questions could we ask that would help us change the outcome that led to the civil war?
5. How could we gather information that might help us answer our questions?
6. What outcome could we envision that would be better than the civil war?

You could score this game by counting the number of possible answers to each question that each student contributes. To prevent the free rider problem, you could score the lowest number of answers by an individual on each team. Alternatively, you could require that a team could not score any points until every team member contributed at least one answer.

Another game example for a chemistry class might involve an experiment in which you give your students two chemicals and ask them to analyze their properties and predict what will happen when they combine. Again, you would list questions to guide students as they prepare each part of their analysis of the chemicals.

Another game example for a literature class studying a play could challenge the students to predict what they would like to happen in act 3 after reading act 2. Your questions could guide the students to consider different elements of the play such as character development, set design, sequence, lighting, and action. You could organize the game in a series of rounds with your questions inserted into the framework:

1. Round 1
    a.
    b.
2. Round 2
    a.
    b.
3. Round 3
    a.
    b.

The challenge for the students is to contribute answers that combine with other answers teammates have proposed.
A match consists of 3 rounds. The objective of a round is to match or beat your previous best score.

Add each teams' score after each round.

The group loses if the total does not improve. The group wins if they can improve the total score.

Rules

There are no limits to your strategy other than the following rules.

1. Partners must both write answers in complete sentences. (Implied subject is permitted.)
2. One person speaks and the other writes this answer down rephrasing or clarifying as needed.
3. Each answer must be substantially different.

Scoring option

Partners score one point for each pair of answers provided both partners write different answers to the question.

For example, if Partner A writes four answers and Partner B writes 1 answer, their score is one because they have only one pair of answers with two authors. Both partners have a score of one.

A solo participant scores one point for each answer to a solo question provided other rules are followed.

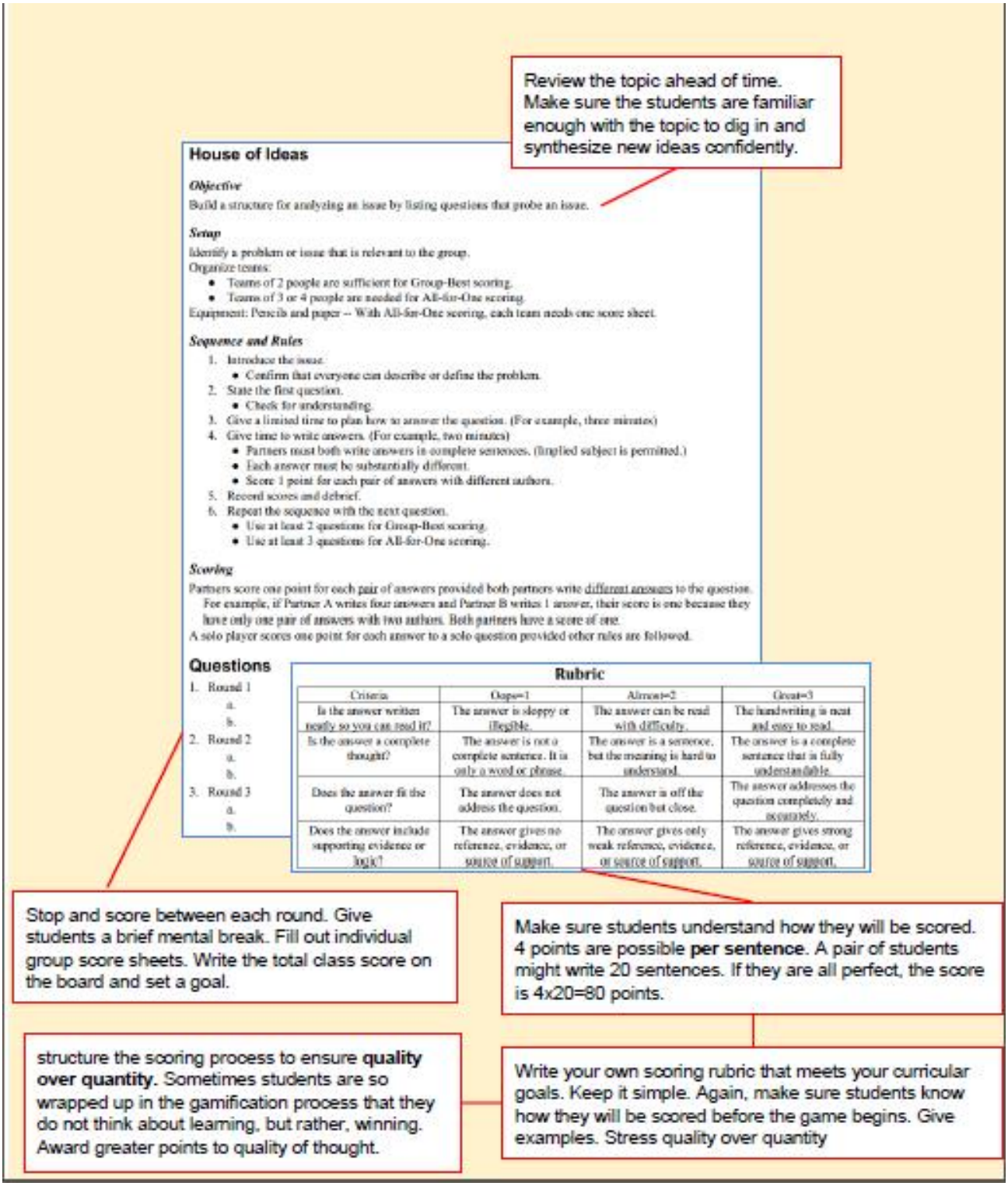
The following rubric can be used or adjusted to fit your goals.

Rubric (12 points possible per answer)

Criteria	Oops=1	Almost=2	Great=3
Is the answer written neatly so you can read it?	The answer is written but illegible.	The answer can be read with difficulty.	The writing is clearly legible.
Is the answer a complete thought?	The answer is not a complete sentence. It is only a word or phrase.	The answer is a sentence, but the meaning is hard to understand.	The answer is a complete sentence that is fully understandable.
Does the answer fit the question?	The answer does not address the question.	The answer is off the question but close.	The answer addresses the question completely and accurately.
Does the answer include supporting evidence or logic?	The answer gives no reference, evidence, or source of support.	The answer gives only weak reference, evidence, or source of support.	The answer gives strong reference, evidence, or source of support.

Debriefing is essential to the EnTeam process.

House of Ideas Annotated Rule sheet.



Appendix A – Additional Games

Vocabulary Collaboration – teacher notes

Learning objective: Students interview each other using the Frayer model and the EnTeam process for measuring cooperative performance.

Equipment

- List of vocabulary words organized into three groups – one group for each game
- Dictionaries or examples of the words in context
- Paper and pens or pencils
- Clock with count-down timer (or second hand)
- Frayer graphic organizer (see template)
- Score sheets (EnTeam four-person score sheets or three-person score sheets)

Set up

- Each match uses one group of vocabulary words.
- Organize teams with 3 or 4 students per team.
- Each person needs one piece of paper and a pen or pencil and access to definitions or examples.
- Each team uses one score sheet for a match.

Flow of the match

- Before the match, assess prior knowledge.
- Form teams.
- Have students write their names on score sheets.
- Announce the first two words. Give time for teammates to talk and plan.
- When the time-keeper starts the clock, one partner interviews the other; solo player works alone.
    - In game 1, A has 2 minutes to ask B about the first word and A writes what B says on the graphic organizer. D asks C about word 2 and D writes what C says.
    - Solo player works alone on a graphic organizer.
- After three minutes, the interviewer becomes the interviewee with the alternative word.
- Exchange papers so students score each other's work.
    - For example, A&B score C&D's graphic organizer.
- Record scores, change partners and prepare to work on the next pair of words.
- Close with post-test, debrief and evaluation.

Variation: If class time is too short for three rounds…

- Stay in the original pairs and only do one or two rounds.

Vocab Collab – setup and rules

Objective

Students collaborate to build their vocabularies.

Equipment

- List of vocabulary words
- Text that uses the words or dictionaries
- Pens or pencils
- Paper for teach student
- Score sheet for each team

Rules

1. Interviewer may only write what the interviewee says.
2. Solo players may talk with teammates but must work independently with a different word.
3. Examples and non-examples must be original – not copied from the book or from other students.
4. Teammates are allowed to coach each other and make suggestions.

Scoring

- Count 1 point for a correct definition, 1 point for a list of characteristics, 1 point for each example, and 1 point for each non-example.
- The score for partners is the number of pairs of points earned by both partners.
    - Because partners are working together they both own the same score.
    - For example, if Partner A writes 2 items for B and B writes 8 items for A, then they both score 2 points because they have 2 pairs of points.
        - In other words, the score for both partners is the lower number.

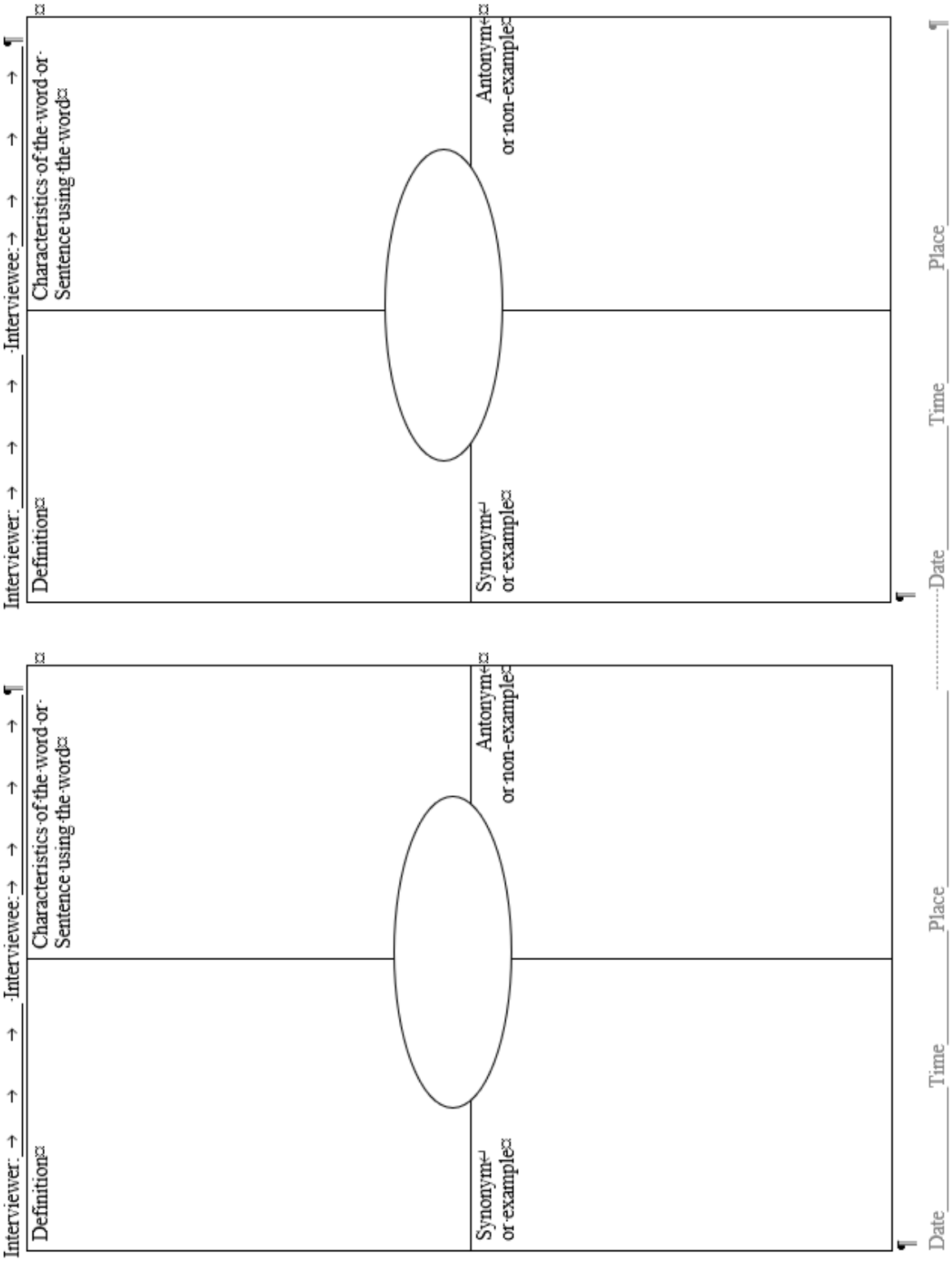
Debrief

- What happened?
    - What helped you master words?
    - How many words did you master?
    - How did this process feel?
- So what?
    - How does studying together impact learning for you?
    - When you help someone else learn, what does that do for you?
    - What do you learn by studying together?
- Now what?
    - What can you do to increase your success?

Match play

A match consists of three games.
In a match, each teammate has equal time with each other person on their team.

Template for vocabulary game



Peer Editing Game – Teacher Guidelines

The purpose of peer-editing is to use the power of positive peer pressure to improve the quality of student writing. Of course, students are not perfect editors. Although they will make mistakes, both the writing process and the editing process benefits the students.

The good news for teachers is that students have tried several times to improve their papers before you see them.

Learning objectives

- Build skills in using a rubric to assess written material.
- Strengthen skills for giving and receiving constructive feedback.
- Reinforce the fact that good writing isn't written, it's re-written.

Time

Depending on the length of the texts being edited – and whether they are written in advance – this activity can take less than ten minutes or more than an hour.

Equipment

- Writing materials and appropriate reference materials
- Rubric such as the one below
- Timer

Set Up

Organize students into teams of 3 or 4 people per team

- Forming teams of 3 or 4 challenges students to work with more learning styles – especially if you assign team members.

Process: the following guidelines are **suggestions**.

1. Set up for the game by adjusting the rubric to focus on the skills you want the students to master.
    - Keep the rubric simple by scoring only one or two skills at first.
    - Use different rubrics for different aspects of writing.
2. Before you start, show an excellent example of the desired type of writing.
    - You might start with a perfect example and then an example that needs editing.
    - Use the rubric to score each example.
3. We suggest you introduce the process with a simple, quick assignment such writing a sentence.
    - After the students master the process with a simple project, then you can go deeper into your subject.

- For example, if the learning objective is to write a comparison of two items, you might assign students to create a compound sentence comparing two posters in the room.

4. Prepare the students to give and to receive constructive feedback.
    - Encourage a “growth-mindset” that sees mistakes as learning opportunities. (see *Mindset* by Carol Dweck, 2006)
    - Offset the “fixed-mindset” that confuses mistakes as personal faults rather than as stepping stones toward excellence.
5. Introduce the rules.
    - If you have time to build reading comprehension skills, give the teams time to read the rules independently and then call on someone to explain what they read.
    - If students ask a question, simply tell them they can do anything that does not violate the written rules.
    - Use Socratic questions to build higher-order thinking skills.
    - Challenge the students to interpret the rules to answer their own questions.
    - If you give the students experience operating under the rule of law rather than rule of an authority person, you will foster democratic thinking skills.
        - Therefore, do not make up rules or change the rules orally.
        - If you need to change the rules, put the new rules in writing.
6. Set a time limit for the first round of editing.
    - Explain that this is the opportunity to test their plan.
    - If you are strict with the time limit, you will build time management skills.
7. After the time limit is up, gather all the scores and add them together.
    - Explain that they win as a class **if** they can beat their combined score the next time they play.
    - The whole class loses if they cannot beat the combined score in the next game.
    - Challenge the students to develop a strategy that will beat their first score.
8. After the first game, the real learning is in the debriefing. You have many options:
    - Whole group discussion on questions to get the students to analyze the results and plan strategy for the second game.
    - Small group reflection: What happened? So what? Now what?
    - Individual journaling, panel discussion – the possibilities for building higher-order thinking skills are unlimited.
9. Ask for prediction of Plan to improve the scores.
10. Retest - play at least two games.
11. How did it go? Analyze the results.

Match - The objective of a match is to beat your previous best score.

Debrief the match by going back to the ultimate goal for the exercise

Student Guidelines for Writing Game

Objective: work together to improve writing skills.

Steps

1. After you have written a draft, exchange your paper with your partner.
2. Use the rubric supplied by your teacher to score your partner's paper.
   a. Make note of each writing element that is in accord with the rubric and each writing element that violates the rubric.
   b. Write the score in the margin.
3. Return paper to its owner.
4. Edit your paper to improve it. Use the edits by your partner only so far as you agree with them. Do not let your partner mislead you.
5. Repeat.

Score: one point for each writing element you can identify in your partner's paper.

- Underline or bookmark each part of the paper you address.
- The elements you address should include both types of writing elements: those that align with the rubric and those elements that violate the rubric.

Sample Rubric – you should use the rubric supplied by your teacher

This rubric is for a short answer to a question, and supporting evidence is required.

Criteria	Oops	Almost	Great
Is the answer written neatly so you can read it?	The answer is sloppy or illegible.	The answer can be read with difficulty.	The handwriting is easy to read.
Is each sentence a complete thought?	The answer is not a complete sentence. It is only a word or phrase.	The answer is a sentence, but the meaning is hard to understand.	The answer uses complete sentences that are fully understandable.
Does the answer fit the question?	The answer does not address the question.	The answer is off the question but close.	The answer addresses the question completely and accurately.
Does the answer include supporting evidence or logic?	The answer gives no reference, evidence, or source of support.	The answer gives only weak reference, evidence, or source of support.	The answer gives strong reference, evidence, or source of support.

Overview

- The editor returns the paper to the writer who then makes the corrections as appropriate.
- The editing and correcting process continues until the work is deemed finished by the writer and editor.
- The final papers are turned in for review by the teacher.
- The score for the edited paper belongs to both the writer and the editor.
    - Solo writers must do their own editing and are graded accordingly.
- Round two begins: Rotate partners, assign the next set of questions, and resume the process of writing and editing.
- Round three completes the process.

Note: Dr. Ed Harris has found it is powerful to have the students in each group read aloud the final copy to the other group members so that they can hear how the words and sentences sound and fit together. As they hear the paper read three or four times, they almost always make more changes. This process more closely bonds the students to the paper – and to each other. It also forces the students to practice reading for comprehension.

Scoring

The measure of performance has three elements:

- The number of corrections the partners write on each other's papers plus
- The number of constructive suggestions plus
- The number of points of celebration the partners write.

Benefits

- Students have an incentive to encourage each other to write well because the grade of both students depends upon the writing and the editing that the students perform.
- Teachers save time because they don’t have to read the work until it’s been edited at least once. (The teacher may ask the students to hold the material until they have edited at least twice.)
- The atmosphere in the classroom is dynamic in the sense that the students are helping each other perform well.
- Disruptive students are held in check by the classmates because everyone’s grade is dependent upon the active participation of other students. Therefore students have an incentive to encourage productive participation.
- No student is an island because they work together in editing each others’ writing.

Template for Peer-Interviews

Objective: [insert learning objective here]

Form teams of 3 or 4 people per team. Discuss the questions before writing.

Game 1 --	
Players A & B	Player C or Players C & D
1. _____**?** [Insert question above] Person B writes only what A says. Person A writes only what B says.	**2.** _____**?** [This question could be the opposite of #1] *Team of 4 people* Person C writes only what D says. Person D writes only what C says. *Team of 3 people* Person C writes solo.
Game 2 --	
Players A & C	Player B or Players B & D
3. _____**?** [Ideally, questions 3 & 4 are related] Person C writes only what A says. Person A writes only what C says.	**4.** _____**?** *Team of 4 people* Person B writes only what D says. Person D writes only what B says. *Team of 3 people* Person B writes solo.
Game 3 --	
Players A & D or Player A	Players B & C
5. _____**?** [Ideally, questions 5 & 6 are related0 *Team of 4 people* Person D writes only what A says. Person A writes only what D says. *Team of 3 people* Person A writes solo.	**6.** _____**?** Person B writes only what C says. Person C writes only what B says.

Scoring Guide (allow use of sentences with ditto marks and implied subjects.)

Criteria	**Oops = 0**	**Almost = 1**	**Great = 2**
Is the answer a complete thought?	The answer is not complete sentences or is illegible.	The answer is in sentences, but the idea is incomplete or the meaning is hard to understand.	The answer is in complete sentences that are clear and understandable.
How well does the answer fit the question?	The answer does not address the question.	The answer is slightly off topic or confusing.	The answer addresses the question thoughtfully and productively.

Keep on Track

Objective: Players work together to roll balls along a track from the point of beginning to the bag as many times as possible in 4 minutes.

Score: One point each time a ball goes from the point of beginning to the bag (following the rules below).

Your team is responsible for keeping score.

Rules:

1. Each player must participate in rolling the ball on their track.
2. When a ball is on your track, your feet must stay still.
3. Your hands may not touch another player's track.
4. The ball and track may not touch the floor.
5. The ball may be touched only when it is being carried to the starting point.
6. No more than 6 people may be in one relay line.
7. Players may not move the bag or change the point of beginning.

If a rule is broken, return the ball to the point of beginning and start over.

Your team is responsible for monitoring the rules.

Strategy: In this game, you may do anything that does not violate the rules as stated above – as long as you keep safe and don't do anything illegal.

Keep on Topic

Objective: Work together to move ideas from conception to action and results.

Brainstorm for creative solutions to complex topics.

- A brainstorm is a way to think creatively so people can solve a problem together.
- In a brainstorm, people share many ideas that are on the topic.
- A brainstorm is not a time to make judgments about the answers that people suggest.
- The goal of brainstorming is to generate many ideas.
    - Withhold judgment or criticism of ideas.
    - The time for evaluating ideas comes later – not during the brainstorm.

Supplies: Paper and pens
A list of open-ended questions

Sequence:

1. Form small teams.

2. Interview your partner.
3. Write your partner's answers to their question when the brainstorm starts.
    a. Write the ideas legibly so they are easy to share.
    b. Write ideas in complete sentences – one idea per sentence.
4. When time is up, count the number of sentences.
5. Review answers after each brainstorm.

Rules:

A. Let people share any ideas that are on the topic – even wild ideas may be valuable.
B. Go for many ideas. The goal is quantity of ideas on the topic.
    - Judge the ideas later.
C. Do not make fun of ideas or criticize any ideas.
    - Build on the ideas. Look for ways to use the wild ideas.
D. Ideas must be written as sentences – complete thoughts – to count in the score.

Score:

Each sentence can earn up to 4 points:

Criteria	Oops = 0	Almost = 1	Great = 2
Is the answer a complete thought?	The answer is not a complete sentence. It is only a fragment or phrase.	The answer is a sentence, but the idea is incomplete or the meaning is hard to understand.	The answer is in a complete sentence that is clear and understandable.
How well does the answer fit the question?	The answer does not address the question.	The answer is slightly off topic or confusing.	The answer addresses the question thoughtfully and productively.

Periodic Table Matching Game

Objective

Players work together to match each element with its symbol in as few turns as possible.

Teams of people work together to match all the cards twice.

Setup

- Give each team a deck of cards with the elements from the periodic table.
    - Before the game starts let everyone see the names and symbols of the elements on the cards.
    - Shuffle the deck.

- Arrange the cards face down on the table without looking at the face of the cards.

Rules

- When a player has a turn, s/he may turn over only 2 cards.
  - If the cards match, the move the matched cards off the table.
    - Then, the next player has a turn.
  - If the cards do not match, the player lets everyone see the name of the element on each card.
    - If necessary, s/he may look on the periodic table to find the names.
    - Then s/he turns the cards face down in their original places.
    - Then, the next player has a turn.

Score

The goal is to match the cards in the least number of turns.

Keep count of the number to turns each person takes.

The team wins by matching the elements in fewer turns than their previous attempt.

Variations

Depending on the teaching objective and the needs of the students, the objective for the game could be restated in various ways. For example:

- How many matches can two people find together in x tries (x could vary depending on the available time. For example, ten tries would be sufficient to determine a meaningful score.)
- How many matches can three or four people find together in y tries (y would be more than x because everyone needs to have enough tries to learn the pattern)
- Score the number of matches (not the number of tallies).

Options for scoring method:

- Use the round-robin score sheet and play three times
- Use group-best scoring and play twice

Round-robin takes longer because you must explain the score sheet and play thrice.

Too Many Problems to Solve - generic version for partner checking

Build skills in solving problems with partners checking each other's work.

Sequence

1. Three or four students work together in a team. In a team of three, one person will work alone each game.
2. Students write their names at the top of the score sheet.
   In game 1, students A & B should sit next to each other; C & D sit next to each other.
3. Each student solves a different problem following the instructions on the screen.
4. Partners check each other work.
5. After each game, teams exchange papers among teams for scoring.
6. Before the next game, rotate partners as shown on the score sheet.

Rules

A. For the first game, Player A is partner with Player B; Player C is partner with Player D. In a team of 3, Player C works alone in the first game.
B. Each player solves a different problem.
C. Partners may talk and help each other, but must do their own work to solve his/her individual problem.
D. Partners **must** check each other and show the work. Follow instructions on the screen.
E. **Partners cannot go on to another problem without both problems being finished (solved and checked).**
F. Partners will have __ minutes to solve and check as many problems that they can.
G. Once the time limit has expired, teams exchange papers to score the work of other students.
H. Students write the score below the last problem and circle the score and initial it.
I. Return paper to its owner. Owners record scores on their score sheet.

Score each game -- a match consists of three games

Score 1 point for each correct answer and 1 point for correctly checking the work.
Total your team's score.
Add all the team scores for the class score.

The class wins if the score improves. The class loses if the score does not improve.

Debrief

What happened? So what? Now what?

Partners Produce Pairs of Problems

Two people work together to score as many points as they can in two minutes.

Equipment

Each person needs a piece of paper and a pencil

Before you start

Write your first and last name on the top of your paper. Write your partner's name under your name. Write today's date and your teacher's name.

Game rules

1. The teacher defines the type of problem.
2. Each partner makes up problems for the other partner to solve.
3. Each problem must be different.
4. Partners can talk together, but each partner must do his or her own work.

Scoring points

- Score one point for each pair of answers that are correct.
    - For example, if one partner answers 3 problems correctly and the other partner answers 1 problem correctly, the score for both partners is 1 point.

Example – graph the time for a trip using different ways to travel

How long it will take to travel from St. Louis to the White House if you walk, bike, drive, or fly? (The White House is 900 miles from St. Louis.)

- Plot miles on the Y axis
- Plot time on the X axis

Partner A makes a problem for Partner B

- You ride a bike to Washington D.C. and graph how far you traveled each hour. Each hour you travel 20 miles. What is the slope of the line?

Partner B makes a problem for Partner A

- You drive to Washington D.C. and graph how far you travel each hour. You see that each hour you travel 60 miles. What is the slope of the line?

Game Plan for Robot Control Team

Learning objective: students will work together to create and use linear functions related to Newton's first law of motion (an object at rest stays at rest…).

- This game is a sequel to *Keep on Track* because it requires students to work together to achieve a goal that requires collaboration. Teams also collaborate by sharing strategies.
- The class wins together or loses together depending on whether they can improve their combined performance between games 1 & 2 and games 2 & 3.

Common Core State Standards: CCSS.Math.Content.HSA-CED.A and others e.g. modeling

Class time required: depending on the readiness of the students to create graphs, more than one period may be needed for a match including debriefing; a match has 3 games.

Equipment: paper; pencils; measuring tapes or reference points such as seams on floor tiles; post-it notes or other place-markers; timer or clock with second hand; EnTeam score sheets; two copies of *Robot Control Team* page for each team (see attachment); a textbook that explains the skills required of students.

Skills that students use together:

- Make graph of time and position: seconds (on X axis) and distance (on Y axis)
- Compute slope using rise over run.
- The graph can show speed and direction.

Suggested sequence for the game:

A. Introduce the game objective: *Tell a "robot" how to move by making line graphs that show speeds and directions along a straight path for 15 seconds.*
B. Form teams of 3 (or 4) students per team and number the teams.
    - Teams of 3 have 1 robot on 1 path. Teams of four have 2 robots and 2 paths.
C. Let a student read the *Robot Control Team* page to the class.
D. Instruct the students to write their roles on the row of the score sheet for game 1:
    - On teams of 4 students, A is Programmer for B, and D is Programmers for C.
    - On teams of 3, A is Programmer for B, and C is Time Keeper for game 1.
E. Allow students to use the textbook or a model. Keep explanations short. Encourage teammates to help each other make sense of the activity.
F. Allow the teams to prepare graphs and mark their path before you start the clock.
G. First round, odd-number teams observe and score even-number teams doing the activity using the rubric. Then teams rotate and even-number teams observe and score.
H. After teams grade papers and return them, each team records its score on its score sheet.

I. Instruct students to rotate partners for game 2:
    - On teams of 4 students, C is Programmer for A and B is Programmers for D.
    - On teams of 3, C is Programmer for A, and B is Time Keeper.
J. Repeat steps F-H.
K. In the third game, teams of 4 choose who will be the programmers; in teams of 3, A is the Time Keeper, B is Programmer, C is Robot.

Student instructions for Robot Control Team

Game objective: Tell a "robot" how to move by making line graphs that show speeds and directions along a straight path for 15 seconds.

Team members

- Robot – follows directions as shown on graph made by programmer. (Teams of 4 people have 2 robots and 2 programmers.)
- Programmer – creates a graph telling the robot how far and how fast to move (in teams of 4 people, the programmers are also the Timer Keepers).
- Timer Keeper – records how long the robot takes to move between markers.

Game rules

1. Before the clock starts, the team prepares a graph and a path for each robot:
    a. Programmer creates a graph that has at least 3 line segments:
        - Line segment with positive slope
        - Line segment with zero slope
        - Line segment with negative slope
    b. Each person calculates the slope of each line.
        - The slope of each line should be different.
    c. The path the robot travels must be a straight line.
    d. The team must place markers on the floor showing the point of origin and the points where the robot changes speed.
    e. Teammates can talk together, but each person must do their own job.
2. The time limit is 15 seconds per game. All robots in the class start at the same time.

    All teams have time to practice before the clock starts.
3. After all the robots follow the program once, odd-number teams watch and score even-number teams using the rubric below. Then the even-number teams watch and score odd-number teams.
4. After each game, change roles. A full match is three games.

Rubric (Programmers grade the graphs, Robots grade the calculations of slopes, Time Keepers check the marks and times.) The maximum score is 6 points per game.

	Oops = 0	So-so = 1	Wow! = 2
Does the graph have 3 (or more) segments with different slopes?	More than two mistakes	One or two mistakes.	Graph is correct.
Are the calculations of the slope correct?	More than two mistakes	One or two mistakes.	All calculations are correct.
Does the robot reach the marks at the correct time? Do the marks match the graph?	More than one mark or one time is in error.	Only one mark or one time is in error.	Robot reaches all marks on time and all marks are in the correct locations.

Catch

Objective: make as many catches as possible in 15 seconds.

Set up: pairs players throw and catch a ball.

The "ball" may be any objects that can be caught.

Rules

You are free to use any strategy so long as you follow these rules.

1. Players must stand more than double arms apart (>6 feet).
2. If a player drops the ball or the ball touches the floor or other object before it is caught, don't count it.
3. Scoring is limited to 15 seconds.

When any rule is broken, no point can be scored.

Scoring

Score one point for each catch (provided the rules are obeyed).

- Scoring is cumulative: count all your catches for 15 seconds.
- Because the players are working together, they both own every point that is scored.

After each game, add all the scores together.

Winning

Players win if they can increase the combined score each time they play.
The challenge is to improve performance each game.

Between games, take time to debrief and plan how to improve.

The purpose of this game is simply to create a short, physical activity that familiarizes the students with a collaborative scoring process. As soon as the students have won the game (usually after the 2nd round play), transition to Catching Ideas.

Catching On

Objective: Players interview each other and record the other person's ideas regarding a question.

Set up: each player has paper and pen / pencil.
Provide a list of open-ended questions that are numbered.
Set a time limit that is appropriate to the questions.

Rules You are free to use any strategy so long as you follow these rules.

1. You can only write ideas that your partner says. (You may not write an idea unless you partner says the idea.)
2. Both partners must share ideas. Each partner must write at least one idea from the other partner.
3. Each answer must be a complete thought that pertains to a specific question.

If a rule is broken, no point can be scored.

Scoring is based on either quantity or quality:

- For brainstorming, count the number of answers.
- For quality, use a scoring rubric that delineates the expectations for desirable answers and defines values based on proximity to the ideal.

Criteria	Oops=1	Almost=2	Great=3
Is the answer written neatly so you can read it?	The answer is written but illegible.	The answer can be read with difficulty.	The writing is clearly legible.
Is the answer a complete thought?	The answer is not a complete sentence. It is only a word or phrase.	The answer is a sentence, but the meaning is hard to understand.	The answer is a complete sentence that is fully understandable.
Does the answer fit the question?	The answer does not address the question.	The answer is off the question but close.	The answer addresses the question completely and accurately.
Does the answer include supporting evidence or logic?	The answer gives no reference, evidence, or source of support.	The answer gives only weak reference, evidence, or source of support.	The answer gives strong reference, evidence, or source of support.

After each game, add all the scores together.

Before playing the next game, reflect and debrief – relating to the learning objective.

Net Catch

Objective: Players use nets to make as many catches as they can in 3 minutes.
Players win if they can increase their score each time they play.

Rules: Your team may use any strategy so long as
you don't break these rules.

1. Players throw and catch a ball with the net.
   - You may use any type of ball including a bean bag.
2. Players may not touch the ball (except to put it on the net before throwing).
   - In a team of 3 players, one person uses hands.
3. The ball must not touch the floor or your body before it is caught.
4. Two players must hold each net while catching or throwing.
5. Players must start behind the boundaries before the ball is thrown. (The facilitator will show you the boundaries.)
6. Players must throw the ball from behind the line.
   - Players may move inside the line after the ball is thrown.
   - Partners must catch the ball in the air.

When any rule is broken, no point can be scored.

Scoring

Score one point for each catch (provided the rules are obeyed).
Because the players are working together, teammates own every point that they score together.

After each game, add all the scores together and debrief.

Winning: You win together if the combined score increases each time you play.
Everyone loses if the combined score doesn't increase.

The challenge is to improve the score in a series of games.

Safety first: staff should supervise the students when they play EnTeam games.
After each game, staff should collect the nets
and prevent them from being used inappropriately.

Bounce on the Ceiling

This game works only if you can hit the ceiling with a balloon.

Objective: Players work together as a team to bounce the balloon on the ceiling 2 minutes.

The opponent is gravity.

The **goal** is to score as many points as possible.

Set up: Players form a circle holding hands -- both hands.

All teams start the game at the same time.

Score one positive point each time your team's balloon touches the ceiling.

Score one penalty point (a negative point) each time:

- The balloon touches the floor
- The balloon stops moving freely and independently
- The balloon gets kicked
- The circle is broken by someone letting go of a hand. All hands must hold another person's hand or the rope. No hands may be free.

Do not score more than one penalty point in five seconds.

After each game, add all the scores together and debrief.

Bouncing Ideas Around

Objective: Engage everyone in sharing ideas on an issue.

Set-up

Two partners take turns interviewing each other and writing their partner's ideas.

Goal

Develop ideas that could resolve the issue or explore a question.

Each partner writes at least one idea from their partner in enough detail for an outsider to understand the idea.

Rules

A. Only written answers count in the score.

B. Answers should be written as complete thoughts.

C. The interviewing partner may not add anything to what the interviewee says.

a. The interviewer is only a reporter and recording ideas.

b. The interviewer may ask leading questions but may not create the answer.

Score

Quantity: Score one point for each pair of ideas.

Quality: Score with a rubric such as the following:

Criteria	Oops=1	Almost=2	Great=3
Is the written neatly so you can read it?	The idea is written but hard to read.	Most of the idea is written clearly.	All of the writing is clearly legible.
Is the idea a complete thought?	The idea is not a complete sentence. It is only a fragment or phrase.	The idea is a sentence, but incomplete.	The idea is in sentences and complete.
Can an outsider understand the idea	The idea is cryptic – understandable only by the author.	The idea is somewhat understandable.	The idea can be understood by the average person.

Each idea can earn up to 9 points

Learning and Teaching with EnTeam Games

Paradigm Shifts and Moral Hazards

Win-lose thinking is firmly ingrained in our culture. This manual is for educators who see value in raising young people with a balanced understanding of win-win and win-lose. We need a paradigm shift to fully embrace win-win thinking and realize the benefit created by collaboration between different sides. The premise of this manual is that keeping score of improvements in collaboration is one way to cultivate a win-win culture

EnTeam games are designed to score the degree to which participants work together to improve the overall performance of the entire team. Many of the activities, however, divide a large group – the actual team – into smaller groups (sub-teams). As soon as students are put onto sub-teams, the conditioned response of most students is to see the students on the other sub-teams as opponents. For example, when given the task to build a tower, the common instinct of students is to hide their strategy in order to win by building the highest tower. In an EnTeam game, however, the objective is to learn from each other and win together by each team building the tallest tower possible. So, to show collective improvement, teams need to share their strategies so all teams can perform at their highest level.

Within the paradigm shift discussion, there is the opportunity to explore moral hazards that may surface. Occasionally, when participants find that it is improvement that is measured, one of the less-than-honorable responses that can emerge is to "set the bar low" in the initial attempt so that improvement is guaranteed. That is certainly not in keeping with EnTeam strategies that promote excellence in all attempts. It does, however, provide an excellent discussion topic to be addressed with all team members. (One way to avoid the temptation to set the bar low before the first game is to set a minimum score.) The problem of low bar in game one begins to dissolve by game three and completely disappears after game four.

Changing thought paradigms can be a scary process at first. It is essential that you remain positive and supportive throughout the process.

Is this collaboration or cheating?

Another moral discussion that can be pursued with students is to help them understand when collaboration and cooperation slip into cheating and inappropriate sharing. The EnTeam games have clear guidelines and rules that promote learning together, which is an enjoyable and

productive way to learn academic content as well as promote a strong collaborative learning community. So, when does sharing become cheating?

How can a student determine where to draw the line between cheating and sharing? One factor to determine is whether assessment, such as a grade, is being given for individual work or a group's work. If the grade is given to the whole group, then delegating part of the work to each student is appropriate since the grade is an evaluation of the whole group. If, however, grades are being given to individuals, then an important question to ask is: Who is doing the thinking?

If students, for example, are working with a partner to complete an assignment in a vocabulary workbook and they discuss each question in the book together to find the right word to fill in the blank, they are both involved in the thinking. Talking about vocabulary is one of the best ways to learn new words.

If, however, students divide the questions in half and each does a half and shares the answers with the other to just copy into the book, they are cheating each other out of the thinking involved in learning the words. In other words, completing the assignment has been given higher priority than really learning the words – the primary objective. Students cannot be given enough opportunity to think this collaboration/cheating dilemma issue through because they will be confronted with pressure to take shortcuts or help another student take shortcuts to learning throughout school, college, and often into the workplace. By discussing cheating now, in the context of EnTeam game and school, you may be preventing a corporate scandal in 20 years.

Ethical Dilemmas

A great laboratory for discussing moral dilemmas students will face throughout their lives is during the debriefing process after an EnTeam Game. Try to bring up the idea if students do not notice it, but then step back from the conversation and see how the students wrestle with the idea.

Failure is an option

Experimentation leading to innovation is an essential element of cooperative/collaborative learning. As such, EnTeam games are designed to allow students to fail in their attempts and then through reflection and feedback experiment again to improve. It is very important that students be allowed to fail in order to improve.

Every inventor fails more times than he or she succeeds, but if that inventor had quit because of failure, many products we use today would not have been invented. A collaborative

team accepts failure as a chance to fail (or "fall") forward in their problem-solving endeavors and support each other in the process. The teacher plays a crucial role in providing a safe and supportive environment for students to be willing to risk failure in order to improve and innovate. The teacher also plays a pivotal role in keeping the focus on the class as a whole team rather than a focus on individual teams competing. For some students this will be a whole new way of thinking.

Comparison between cooperation in games and markets

The EnTeam scoring system has parallels in the familiar sell-buy agreement. An exchange between a buyer and a seller each of whom is acting freely and in their own best interest, both are better off after the transaction than before. Otherwise, they would not make the exchange of goods for money. Since both buyer and seller benefit, then they both win by making the transaction. If either the buyer or the seller walks away from the transaction feeling like a loser, there is something wrong with the transaction and the aggrieved party will not desire to transact again. Only when both buyer and seller feel like winners is there a basis for sustainable future transactions.

Likewise, the EnTeam scoring system for sports and games follows the logic of a sell-buy agreement: both sides win or both sides lose depending on whether they both improve through the encounter. Notice that win-lose sports and games also benefit both sides; the difference is that the EnTeam scoring process quantifies how much both sides improve in a series of games. By playing EnTeam sports and games, players practice using the skills necessary to create win-win relationships in life beyond the life beyond the game.

Appendix B – Background on EnTeam

What does EnTeam mean?

The word ENTEAM was coined because English does not have a word for events or games in which different sides work together collaboratively while keeping score of improvements in cooperative performances. Enteaming is the process of bringing together different individuals (or groups) in a series of contests in which both sides lose or both sides win depending on whether they improve their combined score.

An ENTEAM contest is an event that challenges different sides to win together by repeatedly improving their performance together.

In the same way the prefix "en" turns the noun "joy" into the verb "enjoy" and "courage" into "encourage," the noun "team" becomes "enteam."

EnTeam Core Beliefs

Scoring improvements in cooperative performances is not only possible, it is beneficial.

> The purpose of keeping score of cooperative performance is to assess improvement in accomplishing goals together.
>
> When people learn to keep score of cooperative performance, they gain a tool that is useful for building productive and peaceful relationships.
>
> Keeping score of cooperative performance encourages competition against impersonal opponents (such as time, distance, ignorance, etc.) in contrast with competition against people.

For balanced development, both types of competition (win-lose and win-win) are valuable and necessary. Children and adults benefit from practice and repetition with both types of competition.

Vision People can create a more peaceful and productive world by learning to win together.

Mission Encourage educators to use collaborative games that strengthen students socially and academically.

Goal The goal of EnTeam is to increase productivity and peace by giving students balanced experiences in winning both ways: win-win and win-lose.

Approach The approach that EnTeam Organization uses to achieve its mission and goal has two elements:

1. Games that keep score of improvements in collaboration require players from different sides to work together to score goals. The distinguishing feature of all EnTeam Games is the scoring process which measures improvements in collaborative performances between players. If a game does not keep score of improvements in cooperation between players, it is not an EnTeam Game.
2. Leaders who are prepared to facilitate the games effectively. These leaders guide the players to keep score accurately, glean from the scores which approaches produce positive results, and which are producing negative results, and facilitate learning from experience how to improve their scores.

Origin of EnTeam

A personal note by the founder of EnTeam, Ted Wohlfarth:

While my kids were growing up, they played on numerous sports teams. During those years, my work was preparing market studies and teaching economics. My focus was competitive markets, especially the industrial real estate market. Sometimes, I coached my children's sports teams.

For several years, I wondered why all sports and games keep score based on the premise of zero-sum games: one person's gain is someone else's loss. I questioned why the scoring system in sports does not include any scoring systems that parallel the basic buy-sell agreement in which both the buyer and the seller are better off after the transaction -- if the transaction is successful.

By setting up activities to keep score of the accomplishments that two different sides achieve together, the players' attention shifts from a win-lose rivalry to a win-win relationship. Players learn that in some situations they either lose together or win together depending upon whether they can improve their accomplishments together.

The scoring system used in games captures attention. If we measure success based on who is best at working against the other side, then we get teams that are good at outperforming one another. If we measure success based on how well different sides do at accomplishing goals together, then we get teams that are good at bringing out the best in the other side.

Although commercial real estate is a competitive sector of the economy, most transactions are not win-lose but require collaboration among people from several different teams. A successful deal ends with the buyer and seller walking away both feeling like a winner. In a healthy transaction both sides benefit. The agents try to structure win-win relationships. Either both sides succeed or the deal falls apart.

In sports, one team could win only if the other team lost. The question "Did you win?" tells children that winning is the goal, the measure of success. Therefore, the other team was the barrier to success – the adversary.

Why couldn't there be some games where teams win by being skillful at collaborating with the other team so everyone wins by overcoming a problem together – winning based on a win-win outcome much like in a successfully constructed commercial real estate deal? The more I coached, the more the questions grew.

- *We have games that score our ability to compete against each other. Can we score our ability to cooperate with each other?*
- *We know how to measure competitive skill. Can similar processes score cooperative skill?*
- *Since we can invent new games, what kinds of games do we need to score cooperation?*
- *What effect does the way we keep score have on the system of values we give children?*
- *Is there an advantage to scoring the ability to bring out the best in others?*
- *Can we create a greater ability to appreciate diversity by scoring cooperation?*
- *What games do we want to give children?*

These questions let me to develop games that keep score of the performance different sides can achieve together. Since there is not a word in English for trying to win together with people on the "other side!" I coined the word enteam.

The word enteam *means to strive to win together in collaboration with people who are different in some way. EnTeam Organization is a non-profit organization established in 1995 to prepare adults to lead EnTeam Games with fidelity to the principles described in this manual.*

My professional goals are based on the thesis that we can increase peace and productivity by playing games that score cooperation. If children grow up understanding cooperation as clearly as they now understand competition, they will have the tools needed to create a more tolerant and peaceful society.

My personal goal is to learn how to apply these ideas in my own life. I have a long way to go, but I see ways that these games have helped me be a better husband, father, and professional. If I had grown up playing both kinds of games – traditional win-lose games and games that score on a win-win basis – I suspect that I would be even more successful in family life and work life.

*I hope that my grandchildren will grow up playing **EnTeam**® games in schools, and maybe someday in public leagues. I believe these games can help them, their classmates, and communities to be more peaceful and productive.*

***EnTeam**® Organization is devoted to helping teachers to empower students to discover that they can measure collaboration as accurately and fully as they can measure competition – and they can have fun learning academic content in the process. This manual was written with these goals in mind. Please share your experience with EnTeam.*

Graphic Organizer for Debriefing:

Names: Date:

What happened?		
What worked?	What didn't work?	Was there a score?

So, what did we learn? What did this experience teach us?	Now what? In the future, how can we use what we learned?

References

Abrami, P. C., Poulsen, C., & Chambers, B. (2004). Teacher motivation to implement an educational innovation: Factors differentiating users and non-users of cooperative learning. *Educational Psychology*, *24*(2), 2001-2162 Kindle locations.

Coleman, P. T. (Ed.). (2011). *Conflict, interdependence, and justice*. https://doi.org/10.1007/978-1-4419-9994-8

Garmston, R., & Wellman, B. (1999). *The Adaptive School: A sourcebook for developing collaborative groups*. Norwood, MA: Christopher-Gordon Publishers, Inc.

Garris, R., Ahlers, R., & Driskell, J. (2002). Games, motivation, and learning: A research and practice model. *Simulation & Gaming*, *33*(4), 441–467. https://doi.org/10.1177/1046878102238607

Gillies, R. M. (2007). *Cooperative learning: Integrating theory and practice*. Los Angeles: Sage.

Gillies, R. M., & Boyle, M. (2010). Teachers' reflections on cooperative learning: Issues of implementation. *Teaching and Teacher Education*, *26*(4), 933–940. https://doi.org/10.1016/j.tate.2009.10.034

Gilsinan, J., & Wodzak, R. (2015). *Enteam program evaluation*. St. Louis: Saint Louis University.

Gummerum, M., Hanoch, Y., & Keller, M. (2008). When child development meets economic game theory: An interdisciplinary approach to investigating social development. *Human Development*, *51*(4), 235–261. https://doi.org/10.1159/000151494

Haystead, M. W., & Marzano, R. J. (2009). *Meta-Analytic Synthesis of Studies Conducted at Marzano Research Laboratory on Instructional Strategies*. Englewood, CO: Marzano Research Laboratory on Instructional Stratgies.

Johnson, D. W., & Johnson, F. P. (2013). *Joining together: Group theory and group skills (11th ed.).* Upper Saddle River, NJ: Pearson.

Johnson, D. W., & Johnson, R. T. (1998). Cooperative learning and social interdependence theory. In R. S. Tindale, L. Heath, J. Edwards, E. J. Posavac, F. B. Bryant, Y. Suarez-Balcazar, … J. Myers (Eds.), *Theory and research on small groups* (1st ed., pp. 9–35). New York: Plenum.

Johnson, D. W., & Johnson, R. T. (2005). New developments in social interdependence theory. *Genetic, Social, and General Psychology Monographs*, *131*(4), 285–358. https://doi.org/10.3200/MONO.131.4.285-358

Johnson, D. W., Maruyama, G., Johnson, R., Nelson, D., & Skon, L. (1981). Effects of cooperative, competitive, and individualistic goal structures on achievement: A meta-analysis. *Psychological Bulletin*, *89*(1), 47–62. https://doi.org/10.1037/0033-2909.89.1.47

Ke, F., & Grabowski, B. (2007). Gameplaying for maths learning: cooperative or not? *British Journal of Educational Technology*, *38*(2), 249–259. https://doi.org/10.1111/j.1467-8535.2006.00593.x

Killingsworth, S. S., Clark, D. B., & Adams, D. M. (2015). Self-Explanation and Explanatory Feedback in Games : Individual Differences , Gameplay , and Learning. *International Journal of Education in Mathematics, Science and Technology*, *3*(3), 162–186.

Marzano, R. J. (2010). Meeting Students Where They Are. *Educational Leadership*, *67*(5), 71–72.

Vesperman, D. P., & Clark, C. H. (2016). Game Theory in the Social Studies Classroom. *The Social Studies*, *7996*(September), 1–6. https://doi.org/10.1080/00377996.2016.1214901

Wohlfarth, T. A. (2017). *Teachers' perceptions of educational games that keep score of cooperative performances* (University of Missouri - St. Louis). Retrieved from https://irl.umsl.edu/dissertation/701/

Compare Win-Lose Contests with Win-Win or Lose-Lose Contests

	Win-lose	Win-win or lose-lose
Contest	The contest is between **people** who are on opposing "sides." The challenge is for one side to win by **outperforming** the other side or being superior to the other side. **One side** can win only if the other side loses.	The contest is people against a **problem.** People from different "sides" unite against a problem. The challenge is for different sides to win together by **overcoming** impersonal limitations such as time, fear, ignorance, disease, war, or other problems. **Both sides** lose or both win depending on whether they can make progress in overcoming the problem.
Scoring goals	The numbers on the scoresheet count goals scored **separately**. Goals are **conflicting**. If one side achieves their goal, the **other side does not benefit**.	The numbers on the scoresheet count goals scored **collaboratively**. Goals are **complementary**. If one side achieves their goal, the **other side also benefits**.
Skill levels	Players need to be reasonably **close in ability** or skill level for the contest to be meaningful because the score measures whose performance is best.	Players can be extremely **different in ability** and the contest can still be meaningful because the score measures whether their combined scores improve each time they play together.
Determine winner	**One event** can be sufficient to determine which side is the winner and which side is the loser if winning is based on which side has the better score.	At least **two events** are required to determine whether both sides win or both sides lose if winning is based on whether scores are improving. Play multiple times to avoid gaming the score.
Deception or candor?	Players on one side may benefit by **withholding** information or giving **misleading** information (such as a bluff or fake) to the other side.	Players on both sides benefit by giving the other side **accurate**, **comprehensive** information because it can help them increase their combined scores.
Assistance	Helping or sharing with one side **hurts** the other side. (For example, helping the other side in war games is treason.)	Helping one side **increases** both sides' chances for success.
Who wins?	**Only one side wins**. There must be a least one loser (or if the score is a tie, neither wins).	**Both sides win or both lose** depending on whether they can improve performance together.

Both types of contests teach valuable skills. Both can be improved by coaching and practice.

Both measure performances using objective standards of excellence.

Classify games by asking:

1. **Contest** – Does the contest pit one side against the other **or** are both sides collaborating to achieve goals together?
2. **Scoring goals** – Does the scoresheet count conflicting goals or mutually beneficial goals?
3. **Skill differential** – To have a fair contest, do different sides need to be approximately equal in skill and ability?
4. **Determine winner** – What is the minimum number of events needed to determine who wins?
5. **Deception or candor?** – Do players benefit by communicating honestly with players on the other side?
6. **Assistance** – Do people on one side benefit by sharing resources and information with people on the other side?
7. **Who wins?** – If one side wins, can the other side also win? Can both sides lose?