

## Crazy Cardboard Challenge Sample Lesson Plans

The idea behind this problem-based unit is that students will implement the research and engineering processes to create their own, well-planned solution to the problem. This integrated unit combines a student's understand of reading comprehension, the writing process, word patterns, addition, subtraction, multiplication, division, measurement, graphing, force, motion and ways we can help our planet to become a 21-century problem solver. While this unit is scheduled for 11 weeks, some groups may take a longer or shorter time to complete the lessons. Feel free to extend the concepts in any real life application if you feel like your students need the extra practice or extra challenge.

Notes on teaching reading-

Notes on teaching writing

Notes on teaching math

Notes on the engineering process

Notes on inquiry based instruction

Problem- We need a way to entertain students (K-2 OR 3-6: can we create a specific group to help students be more intentional?) with the following constraints.

- all recycled materials
- entertaining to students
- price plan included

### K-2 Resources

- The Beach (Readworks)
- [http://wiki.kidzsearch.com/wiki/Amusement\\_arcade](http://wiki.kidzsearch.com/wiki/Amusement_arcade)

### 3-6 Resources

- What to do with an Problem
- What to do with a Idea
- The Wright Brothers' Invention Process (Newsela)
- The Time America Outlawed Pinball (Newsela)
- Issue Overview: Do Video Games Cause Violence (Newsela)

- Simple Question Leads 13 year old to Start his own Company (Newsela)
- Shoot it Harder, Shoot It Softer (Readworks)
- Amusement Park Motion (Readworks)
- [http://wiki.kidzsearch.com/wiki/Amusement\\_arcade](http://wiki.kidzsearch.com/wiki/Amusement_arcade)

	Monday	Tuesday	Wednesday	Thursday
Week 1	<p><b>ELA</b> Introduce Problem. Ask students what they like to do for fun. What would you do if you did have to entertain other people? What would you do if you could only reuse materials that would otherwise be recycled or thrown away? Identify the problem. Show students a visual of the engineering process. Note that they are completing the first step. Show video.</p>	<p><b>ELA</b> Read What to Do with a Problem. Begin the research process: What is an arcade? Create questions, a KWL chart could be used to assess what students already *think* they know. It is very important to let them know that they may have certain ideas but our research will give us the correct information. Brainstorm printed and digital sources.</p>	<p><b>ELA</b> Guided research: What does good notetaking look like? Model while reading recycling book together. **The purpose of this lesson is to model how to take notes. However, it is appropriate to talk about the benefits of recycling/reusing products since this is a major focus of this project.</p>	<p><b>ELA</b> Shared research: Remind students of what we are researching. Review notes from yesterday. Did you take notes on every detail? What <i>did</i> we take notes on? ***Students should be able to reiterate that we only picked notes that helped us answer our question.*** Read an article together where each student can see the words as you read, pausing in important places to have students take notes.</p>
	<p><b>Standard</b> Science- K-2-ETS1-1, 3-5-ETS1-1</p>	<p><b>Standard</b> W.3.A.a-c. K-2: (only sections a and b) Create a class KWL chart. Create a class question to narrow down the topic. 3-5: Create a class KWL chart. Brainstorm possible research questions. Students can choose their own research question.</p>	<p><b>Standard</b> R.1.B.a K: picture sort of recycled or not recycled 1-4: Discuss prefixes eco- and bio- 5: Discuss prefixes eco- and bio- and use them in context</p>	<p><b>Standard</b> W.3.A. K-2: (sections c-d for K-1, sections c-e for 2) Students may use words, pictures or a combination to take notes in a graphic organizer. 3-5: (section d-f) Students should begin to sort their own information and even create their own categories as they read.</p>
	<p><b>Math</b> K-2: Related word problems focused on modeling and counting on. 3-5: Related word problems involving +/- of three digit numbers focused on modeling.</p>	<p><b>Math</b> K-2: Related word problems focused on modeling and counting on. 3-5: Related word problems involving +/- of three digit numbers focused on modeling.</p>	<p><b>Math</b> K-2: Related word problems focused on modeling and counting on. 3-5: Related word problems involving +/- of three digit numbers focused on modeling.</p>	<p><b>Math</b> K-2: Related word problems focused on modeling and counting on. 3-5: Related word problems involving +/- of three digit numbers focused on modeling.</p>

	<b>Standard</b> K-1: NS.A 2: NBT.B.1 3-5: 3.NBT.A.3,4.NBT.A.5, 5.NBT.A.6	<b>Standard</b> K-1: NS.A 2: NBT.B.1 3-5: 3.NBT.A.3,4.NBT.A.5, 5.NBT.A.6	<b>Standard</b> K-1: NS.A 2: NBT.B.1 3-5: 3.NBT.A.3,4.NBT.A.5, 5.NBT.A.6	<b>Standard</b> K-1: NS.A 2: NBT.B.1 3-5: 3.NBT.A.3,4.NBT.A.5, 5.NBT.A.6
	<b>ELA</b> Shared research: Remind students of what we are researching. Review notes from yesterday. Did you take notes on every detail? What <i>did</i> we take notes on? Students read an article in groups of 3-5 students (based on general reading level) where each student can see the words as they read, pausing as a group to take notes.	<b>ELA</b> Independent research: Review notes from yesterday. Did you take notes on every detail? What <i>did</i> we take notes on? ***Students should be able to reiterate that we only picked notes that helped us answer our question.*** Read an article in pairs (based on general reading level) where each student can see the words as they read, pausing as a team to take notes.	<b>ELA</b> Independent research: Review notes from yesterday. Did you take notes on every detail? What <i>did</i> we take notes on? ***Students should be able to reiterate that we only picked notes that helped us answer our question.*** Students read an article independently (based on general reading level) pausing to take notes. Students can pair up and reread with a partner to compare notes.	<b>ELA</b> Collaboration: Students get back together with their partner and discuss the information they found about an arcade. They come up with an 8-10 word definition. Then, the pair meets with another pair, discusses what they learned and come up with one 8-10 word definition for the large group. Then the whole group comes back together and determine one 8-10 word definition for the whole group.
Week 2	<b>Standard</b> W.3.A. K-2: (sections c-d for K-1, sections c-e for 2) Students may use words, pictures or a combination to take notes in a graphic organizer. 3-5: (section d-f) Students should sort their own information and create their own categories as they read.	<b>Standard</b> W.3.A. K-2: (sections c-d for K-1, sections c-e for 2) Students may use words, pictures or a combination to take notes in a graphic organizer. 3-5: (section d-f) Students should sort their own information and create their own categories as they read.	<b>Standard</b> W.3.A. K-2: (sections c-d for K-1, sections c-e for 2) Students may use words, pictures or a combination to take notes in a graphic organizer. 3-5: (section d-f) Students should sort their own information and create their own categories as they read.	<b>Standard</b> SL.1.A.a-b 2: only section a
	<b>Math</b> K-2: Related word problems focused on fluency and decreasing the use of models. 3-5: Related word problems involving +/- of three digit numbers focused on composing and decomposing numbers and using benchmark numbers.	<b>Math</b> K-2: Related word problems focused on fluency and decreasing the use of models. 3-5: Related word problems involving +/- of three digit numbers focused on composing and decomposing numbers and using benchmark numbers.	<b>Math</b> K-2: Related word problems focused on fluency and decreasing the use of models. 3-5: Related word problems involving +/- of three digit numbers focused on composing and decomposing numbers and using benchmark numbers.	<b>Math</b> K-2: Related word problems focused on fluency and decreasing the use of models. 3-5: Related word problems involving +/- of three digit numbers focused on composing and decomposing numbers and using benchmark numbers.

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Week 3	<p><b>ELA Writing Informational Text-</b>            On this first day of writing, students should review their notes they took the previous week. Today they will begin the process of writing a book that can help other children understand what an arcade is. By the time the day is over, they should have an outline of their book/paper. They should have at least 3 detail paragraphs created for the middle of the book/paper. K-2 students do not need to have formal paragraphs, just groups of ideas. This should be modeled for students of all grade levels. For younger students, this can be a shared writing experience. For older students, one paragraph can be modeled and then they can create the other independently. For middle levelled students, they can receive additional support from the teacher or through the use of partnering and/or groupings. When modeling, make sure to leave some mistakes in your writing including extra/missing words and misspellings/punctuation errors.</p>	<p><b>ELA Writing Informational Text-</b>            On the second day of writing, students should review the paragraphs written yesterday. Today they will draft the opening and closing of their informational text to help other children understand what an arcade is. By the time the day is over, they should have a complete outline of their book/paper. They should have an introduction, at least 3 detail paragraphs and a conclusion. K-2 students do not need to have formal paragraphs, just groups of ideas. This should be modeled for students of all grade levels. For younger students, this can be a shared writing experience. For older students, one paragraph can be modeled and then they can create the other independently. For middle students, they can receive additional support from the teacher or through the use of partnering's and/or groupings. When modeling, make sure to leave some mistakes in your writing including extra/missing words and misspellings/punctuation errors.</p>	<p><b>ELA Editing Informational Text-</b>            Today, students will reread their writing and make changes as they see the need. It is essential for the teacher to model this process with his/her own writing which is why mistakes were left in the draft. Adding more exciting language should also be modeled for older students. Students can either edit their own work with a checklist or can edit another student's work. It is also effective for lower- level students to work with the teacher to effectively edit.</p>	<p><b>ELA Publishing Informational Text-</b> Students should publish their writing so it can be easily read by others. All writing and pictures should be finished by the end of this session. This can be done using physical materials or using technology.</p>

Week 3 contd	<p><b>Standard W.1.B</b> Note differences in the expectations for organizing writing at each grade level.</p>	<p><b>Standard W.1.B</b> Note differences in the expectations for organizing writing at each grade level.</p>	<p><b>Standard W.1.C</b> Note differences in the expectations for editing writing at each grade level.</p>	<p><b>Standard W.1.D</b> Note differences in the expectations for publishing writing at each grade level.</p>
	<p><b>Math</b> K-2: Related word problems involving +/- of one and two digit numbers focused on modeling. 3-5: Related word problems involving multiplication and division of three digit numbers focused on using groups and modeling if necessary. At the very least, the students should draw pictures of their groupings at the beginning of the week.</p>	<p><b>Math</b> K-2: Related word problems involving +/- of one and two digit numbers focused on modeling. 3-5: Related word problems involving multiplication and division of three digit numbers focused on using groups and modeling if necessary. At the very least, the students should draw pictures of their groupings at the beginning of the week.</p>	<p><b>Math</b> K-2: Related word problems involving +/- of one and two digit numbers focused on modeling. 3-5: Related word problems involving multiplication and division of three digit numbers focused on using groups and modeling if necessary. At the very least, the students should draw pictures of their groupings at the beginning of the week.</p>	<p><b>Math</b> K-2: Related word problems involving +/- of one and two digit numbers focused on modeling. 3-5: Related word problems involving multiplication and division of three digit numbers focused on using groups and modeling if necessary. At the very least, the students should draw pictures of their groupings at the beginning of the week.</p>
	<p><b>Standard</b> K-1: NS.A 2: NBT.B.1 3-5: 3.RA.A.4</p>			
	<p><b>ELA Science-</b> Introduce balanced and unbalanced forces using Center 1 from <a href="#">this link</a></p>	<p><b>ELA Science-</b> Discuss push and pull using Center 2 from <a href="#">this link</a></p>	<p><b>ELA Science-</b> Discuss the impact of pushes and pulls on a variety of arcade games. Have students journal about the impacts and how it is helping them decide what type of machine they would like to build.</p>	<p><b>ELA Science-</b> Discuss gravity using Center 3 from <a href="#">this link</a></p>
	<p><b>Standard</b> K-2: K-PS2-1 3-5: 3-PS2-1</p>	<p><b>Standard</b> K-2: K-PS2-1 3-5: 3-PS2-1</p>	<p><b>Standard</b> K-2: K-PS2-1 3-5: 3-PS2-1</p>	<p><b>Standard</b> K-2: K-PS2-1 3-5: 3-PS2-2</p>
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Week 4	and counting on. 3-5: Related word problems involving multiplication and division of three digit numbers focused on using groups and modeling if necessary. Students might need to continue with drawing pictures but should be working toward fluency especially with 0's, 1's, 5's and 10's problems.	and counting on. 3-5: Related word problems involving multiplication and division of three digit numbers focused on using groups and modeling if necessary. Students might need to continue with drawing pictures but should be working toward fluency especially with 0's, 1's, 5's and 10's problems.	and counting on. 3-5: Related word problems involving multiplication and division of three digit numbers focused on using groups and modeling if necessary. Students might need to continue with drawing pictures but should be working toward fluency especially with 0's, 1's, 5's and 10's problems.	and counting on. 3-5: Related word problems involving multiplication and division of three digit numbers focused on using groups and modeling if necessary. Students might need to continue with drawing pictures but should be working toward fluency especially with 0's, 1's, 5's and 10's problems.
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Week 5	<b>ELA Science-</b> Discuss the impact of gravity on a variety of arcade machines. Have students journal about the impacts and how it is helping them decide what type of machine they would like to build.	<b>ELA Science-</b> Discuss decreasing speed using Center 4 from <a href="#">this link</a>	<b>ELA Science-</b> Discuss the impact of mass on speed/movement using Center 5 from <a href="#">this link</a>	<b>ELA Science-</b> Discuss how the amount of force changes the movement of an object using Center 6 from <a href="#">this link</a>
	<b>Standard</b> K-2: K-PS2-2 3-5: 3-PS2-2	<b>Standard</b> K-2: K-PS2-2 3-5: 3-PS2-2	<b>Standard</b> K-2: K-PS2-2 3-5: 3-PS2-2	<b>Standard</b> K-2: K-PS2-2 3-5: 3-PS2-2
	<b>Math</b> K-2: Read How Big is a Foot. Have a discussion about what happened in the story and why it was hard for the people to get the right amount. Give students a chance to measure different items in their feet. Make sure to do yours, too, to give a very different number. Discuss. 3-5: Measurement practice- students practice choosing the	<b>Math</b> K-2: Review yesterday's activity. How can we make sure we are getting the same measurement? We could use a nonstandard unit of measure! This could include paper clips, unit cubes, etc. Discuss and model how these have to be lined up end to end with no gaps in order for this to work. Students complete measurement practice using	<b>Math</b> K-2: Continue measurement practice with nonstandard units. Record data in a table using tally marks. Model this for students before you send them out to do it on their own. 3-5: Begin a discussion about area/perimeter with the thought of how all of the game s will fit together in the arcade. The students will eventually have to	<b>Math</b> K-2: Continue measurement practice with nonstandard units. This time record data in a table and using a line plot. 3-5: Continue to practice real life applications of area and perimeter.

	<p>correct unit to measure different items. Students should be able to verbalize why they are choosing a certain unit and should be able to measure accurately to the nearest unit.</p>	<p>nonstandard unit. Come back together and discuss if this was more reliable than using their own feet. 3-5: Students should have a guided investigation of the relationship between millimeters, centimeters and meters. Eventually, they should be able to convert from meters to centimeters and centimeters to millimeters with assistance.</p>	<p>create a map of the arcade. Why is area important? Why is perimeter important? Model how to do both. Give students a chance to practice both kinds of measurement with a partner or group. Rectangular carpets/rugs are a great way to practice this skill. Make sure all units are whole units.</p>	
	<p><b>Standard</b> K-2: 1.GM.B.1-3, 2.GM.B.1-3 3-5: 3.GM.B.4-5</p>	<p><b>Standard</b> K-2: 1.GM.B.1-3, 2.GM.B.1-3 3-5: 3.GM.B.4-5</p>	<p><b>Standard</b> K-2: 1.GM.B.1-3, 2.GM.B.1-3 3-5: 3.GM.B.4-5</p>	<p><b>Standard</b> K-2: 1.GM.B.1-3, 2.GM.B.1-3 3-5: 3.GM.B.4-5</p>
Week 6	<p><b>ELA</b> Students will now research the history of different kinds of arcade games to start their own planning process. They should take notes on aspects of the game they like and those they don't like.</p>	<p><b>ELA</b> Students will research a different arcade game than they researched yesterday to add more knowledge to their schema so they can plan more efficiently. They should take notes on aspects of the game they like and those they don't like.</p>	<p><b>ELA</b> Read What to do with an Idea. Give students quiet time to plan individually. Make sure to look back at the engineering process and note that they identified a problem, did research and now they are ready to create their first plan. Their plan must include approximate measurements and a list of supplies needed. This must be done by the end of the class period or before class starts tomorrow.</p>	<p><b>ELA</b> Students meet with their group (while self-selected is fun, the teacher might consider having some say in the groups especially if there are personality conflicts within the group. This is a great time to address speaking and listening but difficult situations will need to be given extra teacher support). Students will each get a couple of minutes to share their idea without anyone saying anything or giving any kind of feedback. Then the team will work together to decide what the final product will look like.</p>
	<p><b>Standard</b> W.3.A. K-2: (sections c-d for K-1, sections c-e for 2) Students may use words, pictures or a combination to take notes in a graphic organizer. 3-5: (section d-f) Students should sort their own</p>	<p><b>Standard</b> W.3.A. K-2: (sections c-d for K-1, sections c-e for 2) Students may use words, pictures or a combination to take notes in a graphic organizer. 3-5: (section d-f) Students should sort their own</p>		

	information and create their own categories as they read.	information and create their own categories as they read.		
	<p><b>Math</b> K: Identify pennies and dime. These can be introduced using the popular rhymes but all students should be able to look at and feel a real penny and dime. They can practice counting by 1's and 10's. Counting by 10's will be new to them. Students will also probably need to review what a cent means. 1-2: Measure length using objects (cubes, paper clips, etc.). Once students understand that measuring involves lining the items up end to end without any gaps. When they are ready to move on, they can begin to use rulers. It is important to note the difference between centimeters and inches. 3-5: Continue real life application of area and perimeter practice.</p>	<p><b>Math</b> K: Continue real world practice with problems involving pennies and dimes. 1-2: Measure length using objects (cubes, paper clips, etc.). Once students understand that measuring involves lining the items up end to end without any gaps. When they are ready to move on, they can begin to use rulers. It is important to note the difference between centimeters and inches. 3-5: Discuss scale using grid paper. Practice using a scale when calculating area/perimeter.</p>	<p><b>Math</b> K: Identify nickels and quarters. These can be introduced using the popular rhymes but all students should be able to look at and feel a real nickel and quarter and compare them to the other coins. They can practice counting by 5's with nickels. Students can use a 100 chart to count by 25's and figure out how many quarters are in a dollar 1-2: Measure length using objects (cubes, paper clips, etc.). Once students understand that measuring involves lining the items up end to end without any gaps. When they are ready to move on, they can begin to use rulers. It is important to note the difference between centimeters and inches. 3-5: Using the teacher's sketch, the students will go through a guided practice of drawing on graph paper and finding the area and perimeter of the game.</p>	<p><b>Math</b> K: Continue real world practice with problems involving all coins. 1-2: Measure length using objects (cubes, paper clips, etc.). Once students understand that measuring involves lining the items up end to end without any gaps. When they are ready to move on, they can begin to use rulers. It is important to note the difference between centimeters and inches. 3-5: Students will plot their game on graph paper and find the area and perimeter with their group. Then, as a whole class, they will create a scaled map keeping in mind there must be 3 feet for people to walk and finding ways to make the arcade aesthetically pleasing. They will need to know the entire area of the arcade so they would be able to order flooring. This can be extended by allowing students to research flooring options and use multiplication to find the total price of the flooring.</p>
	<p><b>Standard</b> K: GM.B.3 1-2: GM.B.1-3 3-5: 3.GM.B.4-5</p>	<p><b>Standard</b> K-2: GM.B.3 1-2: GM.B.1-3 3-5: 3.GM.B.4-5</p>	<p><b>Standard</b> K-2: GM.B.3 1-2: GM.B.1-3 3-5: 3.GM.B.4-5</p>	<p><b>Standard</b> K-2: GM.B.3 1-2: GM.B.1-3 3-5: 3.GM.B.4-5</p>
Week 7	<p><b>ELA</b> Prototype- If the technology is available, students can create a prototype using a 3D printer. Each student</p>	<p><b>ELA</b> Complete the prototypes. Each group must also have a final list of supplies needed and know where they are coming</p>	<p><b>ELA</b> Students are given the ELA time block to build their machine. They will also have additional time to build the</p>	<p><b>ELA</b> Students complete their build. If they made any adjustments to their original design, it should be noted on their</p>

	<p>should create a prototype using the sketch that the group made together. Older students can investigate scale and imagine how that plays a part in how the prototype looks. If no technology is available, students can use other mediums to create the prototype. Students should record how they feel about their progress in their journal.</p>	<p>from. This allows teachers to have time to gather materials before building begins tomorrow. Students should record how they feel about their progress in their journal.</p>	<p>following day. Students should record how they feel about their progress in their journal.</p>	<p>sketch. Students should record how they feel about their progress in their journal.</p>
	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
	<p><b>Math</b> Discuss the measurements involved in creating the game. What do we need to know? Why is it important? What unit should we use to measure our game? Why? Students include their thoughts and reasoning in their journal. Older students can continue to explore scale with their prototype.</p>	<p><b>Math</b> Measure the prototype and discuss how the measurements relate to the real size. Will the actual game be that big? Older students can continue to explore scale with their prototype.</p>	<p><b>Math</b> Graph- Introduce the concept of graphing. Can use a Scoot as an example. Lay out 6 anchor charts with different questions (favorite color, favorite animal, favorite subject in school, etc.) and have students leave post it notes with ONE answer on each poster. Pull one poster up and ask students to answer comprehension questions. How could we organize our data in a way that would make it easier to analyze the data? Eventually, it should resemble a bar graph.</p>	<p><b>Math</b> Continue practice creating and reading graphs. If students are proficient in reading bar graphs, they can move onto other kinds of data representation as noted in the standards.</p>
	<p><b>Standard</b> K-2: GM.B.3 3-5: 3.GM.B.4-5</p>	<p><b>Standard</b> K-2: GM.B.3 3-5: 3.GM.B.4-5</p>	<p><b>Standard</b> DS.A.</p>	<p><b>Standard</b> DS.A.</p>
Week 9	<p>ELA- As a group, each machine will be tested. Members of the class will be able to share what they liked or what they would like to see improved with the</p>	<p>ELA- Students are given time to make changes to their machines as a group. They also must do at least 3 tests while making their changes to ensure</p>	<p>ELA- As a group, each machine will be tested. Members of the class will be able to share what they liked or what they would like to see improved with the</p>	<p>ELA- Students are given time to make changes to their machines as a group. They also must do at least 3 tests while making their changes to ensure they are</p>

	groups. The group meets together and decides on one change that they will make tomorrow and record the change and the reason in their journal. If there is time, they can add a prediction of what they think will happen the next day.	they are making effective changes. Students will write in their journals to describe how they feel their change day went and must include at least 2 details explaining why they think that.	groups. The group meets together and decides on one change that they will make tomorrow and record the change and the reason in their journal. If there is time, they can add a prediction of what they think will happen the next day.	making effective changes. Students will write in their journals to describe how they feel their change day went and must include at least 2 details explaining why they think that.
	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
	Math- Graph and analysis- Combined with ELA today. Students will collect data during the testing portion and they will analyze the data to understand how their machines are performing.	Math- Graph and analysis- Combined with ELA today.	Math- Graph and analysis- Combined with ELA today. Students will collect data during the testing portion and they will analyze the data to understand how their machines are performing.	Math- Graph and analysis- Combined with ELA today.
	<b>Standard</b> DS.A	<b>Standard</b> DS.A	<b>Standard</b> DS.A	<b>Standard</b> DS.A
Week 10	ELA- This begins a two week mini unit on the differences between persuasive and opinion writing. Show students different persuasive pieces (including commercials) and opinion pieces. Create a Venn diagram with the students showing the differences. Send students back to their groups to begin to plan their commercial for their game.	ELA- Persuasive Writing- Students finish planning their commercial. All students must have lines to say. Students should practice their lines and create/find any props needed. The teacher can begin to review commercials as groups finish.	ELA- Edit Persuasive Writing- Discuss the importance of emphasizing certain words or ideas. This can be done in a variety of ways depending on student age and ability. In addition, students should think about how they are presenting, including but not limited to gestures, volume, eye contact. The teacher should have reviewed each presentation by the end of today. Students should practice when not meeting with the teacher.	ELA- Present Persuasive Writing- Give students about ten minutes to practice before calling them together to establish listening and feedback expectations on chart paper. Then each group gets to give their presentation. Students should write down the most important parts of each group's presentation. This will be used during the next week's writing unit. Students should also be allowed to give appropriate feedback and ask questions to take adequate notes.
	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>

	<p><b>Math</b> Students determine the price for their game. They must justify why they chose that price and they must show at least 5 ways (depending on age) to make this amount of money. Be sure that their price is developmentally appropriate. For example, \$1.50 would not be an appropriate price for most kindergartners because it will be difficult to manipulate that amount later. It would be appropriate for a third grader or above who understands that 50 cents is equivalent to one-half of a dollar.</p>	<p><b>Math</b> Students will determine the price points for the game. Will there be a fun pass available for your game? Will there be a special price for 5, 10, 50, 100 games?</p>	<p><b>Math</b> Students will create a poster showing their prices for the game, ways to make that amount of money using provided blackline coins and dollars.</p>	<p><b>Math</b> As a whole class, the group will plot the prices on a line plot. They will notice any trends and start to look at which games they could play if they had a certain amount of money.</p>
	<p><b>Standard</b> K.GM.B.3, NBT.A</p>	<p><b>Standard</b> K.GM.B.3, NBT.A</p>	<p><b>Standard</b> K.GM.B.3, NBT.A</p>	<p><b>Standard</b> K.GM.B.3, NBT.A</p>
<p>Week 11</p>	<p><b>ELA</b> Students get to test each other's machines and take notes about each one. These notes will be used to complete the opinion piece this week. It would be appropriate for the group to come back together and make notes about what they like in each game. By the end of the day, young students should write a sentence stating which game they like the best. Older students should be able to identify the game they like and give three reasons why.</p>	<p><b>ELA</b> Draft opinion piece- Younger students should spend the day crafting at least 5 sentences that explain which game they like the best, three reasons why and a conclusion. Older students should spend the day drafting a five paragraph essay explaining which game they like the most, three reasons why and a conclusion. This is the same process they went through at the beginning of the unit. Anchor charts from the beginning of the unit should be brought back out to remind students of how to draft. Discuss difference between opinion and persuasive writing.</p>	<p><b>ELA</b> Edit opinion piece- Students will probably need more time to write, but they should also work on editing today, as well. The mini lesson should focus on editing (using the teacher's own draft with mistakes, again) and the teacher should meet with each student to help them finish their opinion piece.</p>	<p><b>ELA</b> Present opinion piece- Give students a chance to share their thinking. This can be done in a variety of ways: a gallery walk, sharing with multiple partners, sharing with the whole group, recording their voices/videos</p>

Standard	Standard	Standard	Standard
<p><b>Math</b> Students will continue to explore multi-step word problems with their a partner as assigned by the teacher. These word problems will be based on the prices determined by students on their posters.</p>	<p><b>Math</b> Students will continue to explore multi-step word problems individually as assigned by the teacher. These word problems will be based on the prices determined by students on their posters.</p>	<p><b>Math</b> Students will explore which games they would want to play given a certain dollar amount. They would show how much money they would spend and how much money they would get back. This should be modeled by the teacher regardless of student age.</p>	<p><b>Math</b> Students create a visual display showing pictures of the game(s) they would play if they were given \$5.00. They must write to justify why they would play those games and also show their work to show how much money they would spend and how much they would get back in change.</p>
<p><b>Standard</b> K-2: RA.B 3-5: 3.RA.D.1, 5.RA.C.1</p>	<p><b>Standard</b> K-2: RA.B 3-5: 3.RA.D.1, 5.RA.C.1</p>	<p><b>Standard</b> K-2: RA.B 3-5: 3.RA.D.1, 5.RA.C.1</p>	<p><b>Standard</b> K-2: RA.B 3-5: 3.RA.D.1, 5.RA.C.1</p>