LESSON PLAN

Social Media

GRADE LEVEL: ELEMENTARY

brainchild.com | grades 3, 4, 5

Social Media

Elementary Lesson Plan

OVERVIEW OF ACTIVITY

Students will consider ways they can combat the effects of cyberbullying with their own cyber-behavior exemplifying strong character traits. This is a good starting point for more work on bullying and character development.

DURATION

Approximately 1 class period.

STANDARDS ADDRESSED

National Health Education Standards

- **2.5.5 -** Explain how media influences thoughts, feelings, and health behaviors.
- **2.5.3 -** Identify how peers can influence healthy and unhealthy behaviors.

Common Core Learning Standards in Writing

- **CCSS.ELA-LITERACY.CCRA.W.4 -** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

OUTLINE OF LESSON

- Introduction of Social Media content.
- Class will view the Brainchild "Social Media" episode.
- Students will determine a response to a cyberbullying scenario that exemplifies a strong character trait and respond in writing.
- Students will consider how their own cyber-behavior can affect others.

ACTIVITY PROCEDURE

- Teacher will facilitate a class discussion around social media, what it is and how students are affected by it. Teacher and students can create a web of ideas that are generated around social media which should include different types of social media, and cyberbullying at a minimum.
- Class will view the "Social Media" episode, with a lens for cyberbullying.

- Teacher will lead a discussion about character traits and what character traits individuals want to be identified with. Teacher can prompt students to think, "Do I want people to see me as honorable? Fair? Kind? etc."
- Students should be organized into six small groups, **each small group working on one of three vignettes.** Teacher will distribute vignettes, one per student. Small groups can work together to read and brainstorm responses to the prompt. The vignettes are designed to encourage critical thinking around how social media can affect people and what the individual's role is when faced with a problematic situation. Teacher must be available to support some of the complex and mature topics referenced in vignettes.
- Whole class will share out vignettes and verbal responses exemplifying strong character traits. Time permitting, role play can be used as the share-out. (Written component is homework.)

FOLLOW-UP

For homework, students will independently respond to the prompt, *As a part of the online community, you have the same social responsibilities as in your daily life. Think about what kind of **positive character traits** you possess or want to possess. Do you want people to think of you as kind, caring, heroic, strong, just, etc.? How would that version of yourself respond to the following situation? Why would this be difficult? What challenges would you face? How would this affect the victim?*

MATERIALS LIST

- Student Activity Resource
- 1 vignette per student

Name _____ Date _____

Social Media: Cyberbullying

During the "Social Media" episode of Brainchild, you learned a lot about positive and negative effects of social media. As a part of the online community, you have the same social responsibilities as in your daily life. Think about what kind of positive character traits you possess or want to possess. Do you want people to think of you as kind, caring, heroic, strong, just, etc.? How would that version of yourself respond to the following situation? Why would this be difficult? What challenges would you face? How would this affect the victim?

VIGNETTE 1

While playing a popular online game, Tyrese decided to try a new and difficult physical move during a match with an opponent. Another gamer was watching and began badgering Tyrese in the chat box. "That move was so lame. You're pathetic, you should just kill yourself!" You observed that entire interaction while you were playing the same game. What could you do?

Name _____ Date _____

Cyberbullying

During the "Social Media" episode of Brainchild, you learned a lot about positive and negative effects of social media. As a part of the online community, you have the same social responsibilities as in your daily life. Think about what kind of positive character traits you possess or want to possess. Do you want people to think of you as kind, caring, heroic, strong, just, etc.? How would that version of yourself respond to the following situation? Why would this be difficult? What challenges would you face? How would this affect the victim?

VIGNETTE 2

While at your friend Alex's house, she suggests going on her social media and commenting on pictures. As she logs in, it's clear that she has a phony account with a different name. Alex pulls up a picture of an unpopular classmate and begins narrating her typing, "Nice picture! You look like a fat horse! Go back to the farm horsie." Alex looks to you to add more. What could you do?

Name _____ Date _____

Cyberbullying

During the "Social Media" episode of Brainchild, you learned a lot about positive and negative effects of social media. As a part of the online community, you have the same social responsibilities as in your daily life. Think about what kind of positive character traits you possess or want to possess. Do you want people to think of you as kind, caring, heroic, strong, just, etc.? How would that version of yourself respond to the following situation? Why would this be difficult? What challenges would you face? How would this affect the victim?

VIGNETTE 3

During tryouts for the school musical, someone recorded and posted everyone's auditions. Han sang a song and his voice cracked. He was a little off key, too. Under the video, the comments were brutal: "You should have never opened your mouth! As soon as you did, the windows cracked! Your voice sounds like nails on a chalk-board!" They went on and on, even after the school found out and took down the video. What could you do?

LESSON PLAN

Germs

GRADE LEVEL: ELEMENTARY

brainchild.com | grades 3, 4, 5

Germs

Elementary Lesson Plan

OVERVIEW OF ACTIVITY

After learning some shocking facts about germs, students will participate in a handwashing activity, developing fun habits for proper hygiene to share at home.

DURATION

Approximately 1 class period.

STANDARDS ADDRESSED

National Health Education Standards

- **7.5.2** - Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health.
- **7.5.3** - Demonstrate a variety of behaviors to avoid or reduce health risks.

OUTLINE OF LESSON

- Teacher will introduce content, good bacteria vs bad bacteria (germs).
- Class will view the Brainchild "Germs" episode.
- Class will discuss the best methods of combating the spread of bad germs.
- Class will learn best hand washing methods and practice.
- Students will share methods with their families.

ACTIVITY PROCEDURE

- Teacher will ask students what they know about bacteria, guiding them towards a basic understanding of good versus bad bacteria. Bad bacteria can make you sick, but we need good bacteria to helps us break down foods in our bellies! We call the bad bacteria "germs".
- Class will view the "Germs" episode and be on the lookout for the most effective way to transfer germs from once place to another.
- Teacher will lead a discussion on what students learned about the most effective way to transfer germs from one place to another, spreading diseases (their hands) and come up with the best way to prevent the spread of these germs (washing their hands).

- Teacher will guide discussion on steps to follow in order to most effectively wash your hands. Have students come up with steps and record on chart paper:

  1. Wet hands with clean water because the soap works better with water.

  2. Lather soap to make bubbles on the palms and back of hands, in between fingers, and under nails because germs are in all of theses places.

  3. Scrub hands for 20 seconds to remove germs.

  4. Rinse with clean water to wash away germs.

  5. Dry hands because when hands are dry, less germs stick to them. (Steps adapted from the Center for Disease Control and Prevention.)

- Bring a stopwatch and depending on your space, gather around a classroom sink or another community sink to model the steps with a student. When you get to the scrubbing step, explain to students that the scrubbing should happen for 20 seconds, which is going to feel like a long time. The best way to make sure you scrub for that long is to find a song or part of a favorite song that lasts 20 seconds. Use a timer but also model with the ABC song or Happy Birthday. Complete hand washing steps.
- Students will pair or triple off to come up with a song or a part of a favorite song to sing during the scrubbing phase of handwashing. Ideally, partnerships will have stopwatches, but if not, teacher can lead class with a start time and end time for the 20 seconds and have students rehearse their 20 second song a few times before sharing out.
- Partnerships will share out the 20 second hand washing song that they used.

FOLLOW-UP

Students can complete the activity sheet at home or in school and then share what they have learned with their families.

(OPTIONAL)

Students can work in partnerships to come up with personalized handshakes that DO NOT include actually shaking hands or touching palms.

MATERIALS LIST

- Student Activity Resource, 1 per student
- Working sink
- Soap
- Stopwatch (preferably 1 per small group, however 1 per class will work)

Name _____ **Date** _____

Germs: Handwashing

Today, you learned a lot about germs and how to reduce health risks by washing your hands from the "Germs" episode of Brainchild. This is a habit that is important for your whole family, so teach them what you've learned! Illustrate each step and explain why each step is important.

	Illustration	**Why is it imporant?**
Step 1 **Wet your hands with clean water and apply soap.**		
Step 2 **Lather the soap. Make it bubbly!**		
Step 3 **Scrub your hands for 20 seconds.**		
Step 4 **Rinse with clean water.**		
Step 5 **Dry with a clean towel.**		

* Adapted from the Center for Disease Control and Prevention.

LESSON PLAN

Superheroes

GRADE LEVEL: ELEMENTARY

brainchild.com | grades 3, 4, 5

Superheroes

Elementary Lesson Plan

OVERVIEW OF ACTIVITY

Students will collaborate to solve a classroom problem using some provided classroom materials and their understanding of the lever, a simple machine. Students will catapult a mess off of their tables and towards the trash can.

DURATION

Approximately 1 class period.

STANDARDS ADDRESSED

Next Generation Science Standards

- **3-5-ETS1-2** - Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- **3-5-ETS1-2** - Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

Common Core Learning Standards in Writing

- **CCSS.ELA-LITERACY.CCRA.W.4** - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

OUTLINE OF LESSON

- Teacher will introduce focus content for the episode, simple machines, specifically the use of leverage to make work easier.
- Class will view the Brainchild “Superheroes” episode.
- Class will problem solve a class problem using leverage.
- Students will reflect on process.

ACTIVITY PROCEDURE

- Teacher will prepare tables for post viewing activity as students watch the “Superheroes” episode. Each table should have a few rulers, popsicle sticks, rubber bands, cylindrical blocks, and a mess of soft mini pompoms. Partnerships at tables will have different color pompoms in order to more easily keep track of projectiles. This will ideally happen before students enter space.

- Teacher will introduce the content of **simple machines**, guiding class to discuss what they have learned about them. Attention should be focused on the **lever**, which uses **leverage** to make moving objects easier, or requires less work to move an object. Work can be defined as using a force to move an object. If students have a background on this topic, they should come up with the components of a lever: the lever itself, and the **fulcrum,** or point on which the lever rests. Leverage is using a force applied to a lever to move an object. Teacher should either chart this vocabulary for reference later and/ or have students record it in notebooks.

- Class will view the "Superheroes" episode with a focus on leverage as the "hidden power". Teacher will instruct students to alert the class when they observe leverage highlighted in the episode. Portions like the golden bolt cutter and using the heimlich to help the choking waterboy can be paused, discussed and watched again to help students more deeply understand the concepts.

- Teacher will pose problem for students to solve. Using what you know about leverage, can you create a simple machine to remove all of the mess from the table? Whole class can read prompt on activity resource ***"Your tables are a disaster. The class before you left an awful mess. You need to help clean up but you cannot leave your seats. You must use the materials on your table to create a simple machine to help launch the mess towards the trash can!"*** Teacher will explicitly explain to students that the projectiles will ONLY be aimed towards the trash can.

- Students will work in partnerships at their tables to solve the problem and create the best simple machine to launch the mess towards the trash can. When students feel that they have made a successful machine, they can measure the distance launched and complete the activity resource page. The goal is for students to use leverage and the given materials to engineer a catapult.

- Class will have a brief share out and compare distances achieved with their simple machines.

FOLLOW-UP

Students will complete a homework assignment to guide a reflection on how leverage is used in everyday, household ways. Whole class will compare findings.

MATERIALS LIST

- Student Activity Resource
- Rulers (potential lever)
- Popsicle sticks (potential lever)
- Pencils (potential fulcrums)
- Cylindrical blocks (potential fulcrum)
- Rubber bands
- Mini pom poms, separated by color per partnership (mess)

Name _____ Date _____

Superheroes: Leverage

The burglars in Brainchild used leverage to solve a problem. They used carefully designed bolt cutters to bust open the treasure box. Now you have a problem and need to use leverage to solve it!

INSTRUCTIONS

Your tables are a disaster. The class before you left an awful mess. You need to help clean up but you have to do it from your seats.

- You must use the materials on your table to create a simple machine to help launch the mess towards the trash can!
- Work with a partner to create a simple machine that can best launch the mess to the trash can!
- Draw and label the simple machine you have created. Be sure to use your **simple machine vocabulary!**

What simple machine did you use? What was the farthest distance you were able to launch your mess using your simple machine?

Name _____ Date _____

Superheroes: Leverage Homework

1. Look around your house. Can you find any household tools that use leverage to make life easier?

2. Extend your thinking using research. Use the internet to find other ways levers are used in everyday life.

3. In what ways does leverage make our lives easier? Use your simple machine vocabulary (lever, force, fulcrum, work).

LESSON PLAN

Dreams

GRADE LEVEL: ELEMENTARY

brainchild.com | grades 3, 4, 5

Dreams

Elementary Lesson Plan

OVERVIEW OF ACTIVITY

Students will create a survey using the five "sleep hacks" from the "Dreams" episode: following sleep routines, having a sleeping buddy, reading, avoiding eating, and avoiding screen time. The class will analyze the data and set personal goals to improve their sleep habits.

DURATION

Approximately 1 class period and follow-up discussion.

STANDARDS ADDRESSED

Common Core Standards in Mathematics

- **CCSS.MATH.CONTENT.3.MD.B.3, CCSS.MATH.CONTENT.4.MD.B.4, CCSS.MATH.CONTENT.5.MD.B.2 -** Represent and interpret data.

National Health Education Standards

- **7.5.1 -** Identify responsible personal health behaviors.
- **6.5.1 -** Set a personal health goal and track progress toward its achievement.

OUTLINE OF LESSON

- Teacher will introduce topic of sleep and facilitate a discussion around the benefits of proper sleep.
- Class will view the Brainchild "Dreams" episode.
- Students will carry out a survey around the five "sleep hacks" and analyze data.
- Students will set personal sleep goals.

ACTIVITY PROCEDURE

- Teacher will explain that students will be learning about dreaming in the "Dreams" episode. One component of the show will focus on one benefit of strong sleep habits: avoiding bad dreams. Teacher will facilitate discussion on other potential benefits of getting good sleep and chart results.
- Class will view the "Dreams" episode, with special attention towards sleep habits and the five "sleep hacks".
- Whole class will review the five "sleep hacks" and benefits of good sleep:

  1. Routine: Going to bed and waking up at the same time everyday.

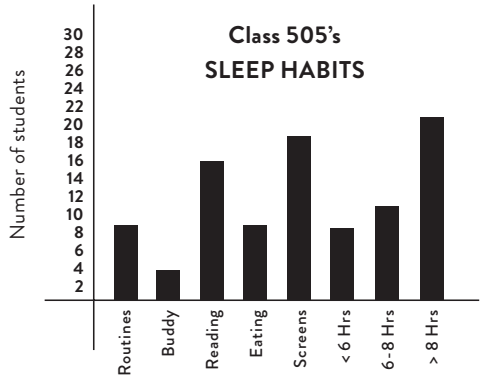
  2. Sleeping Buddy: Sleeping with a stuffed animal or an object that puts your mind at ease.

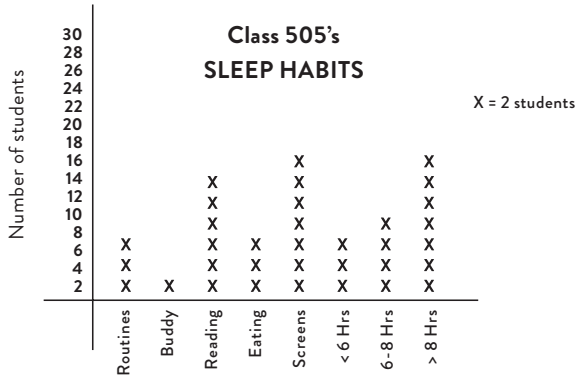
3. Reading: Reading a pleasant story before bed can prime your brain for pleasant dreams.

4. Avoid Eating: Activating your digestive system can keep you from reaching deep sleep.

5. No Devices/Screens: Looking at screens can stimulate your brain into staying awake, even after you put them away – no TV, laptops or smartphones.

- Benefits of good sleep: less scary dreams, better moods, higher cognitive ability, improved overall wellbeing. Teacher will also lead students to think about how much sleep they are getting each night to include in data collection.
- Teacher will have a class graph (bar graph, line plot, or picture graph) created for students to enter data.
- Class will come up with yes/no questions to collect data on sleep hacks and other variables (ex. Do you have a sleeping buddy? Do you avoid eating before bed? Do you get less than 6 hours of sleep? Do you get between 6 and 8 hours sleep? Do you get greater than 8 hours of sleep?)





- Students will be provided a class list (optional data collection sheet provided) and small groups will be responsible for variables. Small groups collect data on individual students and then enter the collected information on the class graph.
- Whole class will analyze findings and reflect on them.
- Goal setting will be the next step as part of an extension activity or homework.

FOLLOW-UP

Students will share what they have learned about the importance of good sleep habits, and the five "sleep hacks" with their families. Each students will choose one sleep goal to help improve their sleep, hopefully resulting in improved mood, decision-making, cognitive ability, and overall wellbeing.

MATERIALS LIST

- Class list for partnerships (optional data collection sheet provided)
- Chart paper for class graph
- Student Activity Resource

Name _____ **Date** _____

Dreams: Sleep

The “Dreams” episode of Brainchild has us thinking about our sleep habits. Write the survey question you have discussed with your teacher before beginning your data collection. We will graph them as a class after all of your data has been collected!

Survey Question:

_____

Student name	Yes	No

Name _____ **Date** _____

Sleep Homework

Share what you have learned from Brainchild about the five "sleep hacks" with your families.

Sleep Hacks:

1. Routine: Going to bed and waking up at the same time everyday.
2. Sleeping Buddy: Sleeping with a stuffed animal or an object that puts your mind at ease.
3. Reading: Reading a pleasant story before bed can prime your brain for pleasant dreams.
4. Avoid Eating: Activating your digestive system can keep you from reaching deep sleep.
5. No Devices/Screens: Looking at screens can stimulate your brain into staying awake, even after you put them away – no TV, laptops or smartphones.

Choose at least one **sleep goal** for yourself and explain **why** you chose it, **how** you plan on achieving it, and how it will positively impact your daily life!

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LESSON PLAN

Space

GRADE LEVEL: ELEMENTARY

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i am OTHER NETFLIX ATOMIC ENTERTAINMENT

Space
Elementary Lesson Plan

OVERVIEW OF ACTIVITY

After viewing the Brainchild "Space" episode, students will consider the astronauts' experience of 16-18 sunrises a day at the International Space Station. They will explore our experience of sunrises on Earth by diving into a rotation and revolution movement activity.

DURATION

This collection of activities can be used as a 2 class period activity using all of the provided centers, or as a 1 class period activity if teacher chooses to isolate the forces.

STANDARDS ADDRESSED

Next Generation Science Standard

- **5-ESS1-2 -** Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.

OUTLINE OF LESSON

- Teacher introduces topic.
- Whole class views the "Space" episode.
- Students participate in a movement activity, modeling the rotation and revolution of Earth.
- Students consider how and why sunrise and sunset are different on Earth and at the International Space Station.

ACTIVITY PROCEDURE

- Teacher explains to students that they will be watching a Brainchild episode on space. Students will be participating in an activity connected to a clip from the very end of the episode about sunrise and sunset.
- Whole class will view the "Space" episode.
- Teacher will distribute Student Activity Resource and have students break into standing groups of two or three, with a central focus on teacher. Teacher will choose the smallest student in the class to represent Earth and a larger student in the class to represent the sun. Hopefully this will help students remember that the Earth is much smaller than the sun in the future. A third member can be chosen to keep everyone in the group on task.

- With class gathered around, teacher will write the word “rotation” on the board and model a rotation with the Earth volunteer. Teacher should explain that anything spinning can be imagined spinning on an invisible line. This is called an axis of rotation (a spiraling football can serve as a good model of this concept). Students can discuss what they observe. Have partnerships or small groups choose the smallest team member to represent the Earth and model rotation. Teacher should call out different numbers of rotations to model, i.e., “Show me two rotations”.

- Once it is clear that class grasps the concept of rotations, class gathers back to central part of room with model. Teacher now gives the sun volunteer the unshaded lamp or flashlight and turns out the lights. Teacher should explain that the unshaded bulb is more like the sun, while the flashlight makes a beam of light, unlike the sun, students should imagine that the sun is radiating light from all directions. Teacher will instruct the model Earth to display a slow rotation as class observes how the light of the sun changes on the Earth. Whole class should discuss what this means (the sunrise and set), and how often this happens (1 rotation per day). Small groups will go off and practice with teacher giving commands, i.e. “Show me one day/ three days/ two rotations.”

- Students can complete the first part of the Student Activity Page, drawing a diagram of the Earth and sun indicating day and night.

- Students come back together once teacher feels students grasp this new concept and have completed the diagram.

- Teacher will pose the question, “How many of you have heard the phrase, ‘the whole world doesn’t revolve around you?’” Teacher will facilitate discussion around this question, pulling ideas of what “revolve” means, what words it’s connected to (“revolution”), and what the various meanings of these words may be. Teacher will facilitate connection of what a revolution looks like using models of Earth and the sun. Teacher will have Earth model walk completely around the sun model.

- Small groups will go off to practice. Teacher will give commands, intermixing rotation and revolution. After a clear grasp has been made, teacher will explain that both of these are ALWAYS happening at the same time, one rotation every day and one revolution every year. Teacher can use Earth and sun volunteers to display this.

- As a final model, teacher can add the International Space Station model attached to a meter stick to demonstrate the orbit of ISS around the Earth. Then have Earth complete a rotation with sun shining. Students should be encouraged to consider how this would affect the sunrise and set for astronauts. This is a difficult concept that should only be touched upon lightly. The emphasis should be placed on rotation and revolution.

- Students can take the remaining time to complete the Student Activity Resource.

- Whole class can review findings.

FOLLOW-UP *(optional advanced work)*

The following prompt is found on the Student Activity Resource.

Today we explored rotations of the Earth and revolutions around the sun. We learned that the rotation of the Earth on its axis creates day and night, or the rise and set of the sun. A revolution of the Earth around the sun happens in one year. During the "Space" episode of Brainchild, you saw a clip of what the sunrise and sunset look like on the International Space Station. Use words and pictures to try and explain why it is so different from what we observe here on Earth.

MATERIALS LIST

- Student Activity Resource
- Low wattage lamp without shade
- Flashlights for student groups
- Small object attached to a meter stick with a string (representing International Space Station).

Name _____ Date _____

Space: Rotations and Revolutions

Draw a model of the relationship between the sun and Earth, indicating day and night.

What is a **rotation**? What happens during one rotation of the Earth?

What is a **revolution**? What happens during one revolution of the Earth?

Name _____ Date _____

Space: Rotations and Revolutions *Follow Up*

Today we explored **rotations** of the Earth and **revolutions** around the sun. We learned that the rotation of the Earth on its axis creates day and night, or the rise and set of the sun. A revolution of the Earth around the sun happens in one year. During the "Space" episode of Brainchild, you saw a clip of what the sunrise and sunset look like on the International Space Station. Use words and pictures to try and explain why it is so different from what we observe here on Earth.

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LESSON PLAN

Emotions

GRADE LEVEL: ELEMENTARY

brainchild.com | grades 3, 4, 5

i am OTHER NETFLIX ATOMIC ENTERTAINMENT

Emotions

Elementary lesson plan

OVERVIEW OF ACTIVITY

Students will use a brief introduction to emotions and the stress response ("fight or flight") and a viewing of the Brainchild "Emotions" episode to come up with methods to deescalate from a stressor.

DURATION

Approximately 1 class period

STANDARDS ADDRESSED

Common Core State Standards in Speaking and Listening

- **CCSS.ELA-LITERACY.CCRA.SL.1** - Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

National Health Education Standards

- **1.5.2** - Identify examples of emotional, intellectual, physical, and social health.

OUTLINE OF LESSON

- Class will discuss what they know about emotions.
- Class will view the Brainchild "Emotions" episode.
- Class will collaborate to develop creative representations of stress (anger/fear) and peace (happiness).
- Class will create a list of methods to help go from feeling stressed out to feeling peaceful.

ACTIVITY PROCEDURE

- As a whole group, preferably seated in a circle, teacher will facilitate charting ideas, encouraging students to think of positive and negative feelings. Teacher will introduce the topic of the Brainchild episode and explain that some of what they learn about "fight or flight" will be discussed after the episode.
- Class will view episode.
- After a brief discussion focused around what students were most intrigued by, teacher will lead students to think about a time when they felt really scared. Students should turn and share that experience with their neighbors. Teacher will illicit a recollection of the term **"fight or flight"** and reteach that when someone feels stressed, the **amygdala** sends distress signals to the body. Class will turn and talk about what it feels like physically if you are stressed. Teacher will explain that you have that response because your body feels

threatened or stressed. Teacher will facilitate a discussion on what the opposite of stressed out might feel like, referring to the puppies from the "Emotions" episode. Students will turn and talk about those feelings and what they physically feel like when experiencing happiness.

- Teacher will have students go off in partnerships to creatively depict the feelings and sources of either: stress (anger or fear), or peace and joy. Either split class in half or have each group depict both feelings. Students may want to draw, create a skit, etc. to depict their emotion. Optional templates for stress and joy can be provided for students requiring more support. Class can share out.
- Class will discuss methods to go from that stress response to the peaceful feeling. Students can come up with methods as a whole group or in partnerships. Optional template can be used. Teacher can help steer students towards belly breathing, visualizations, or focused thought.
- To wrap up the activity, the class can practice some strategies and begin to incorporate them into daily classroom routines.

MATERIALS LIST

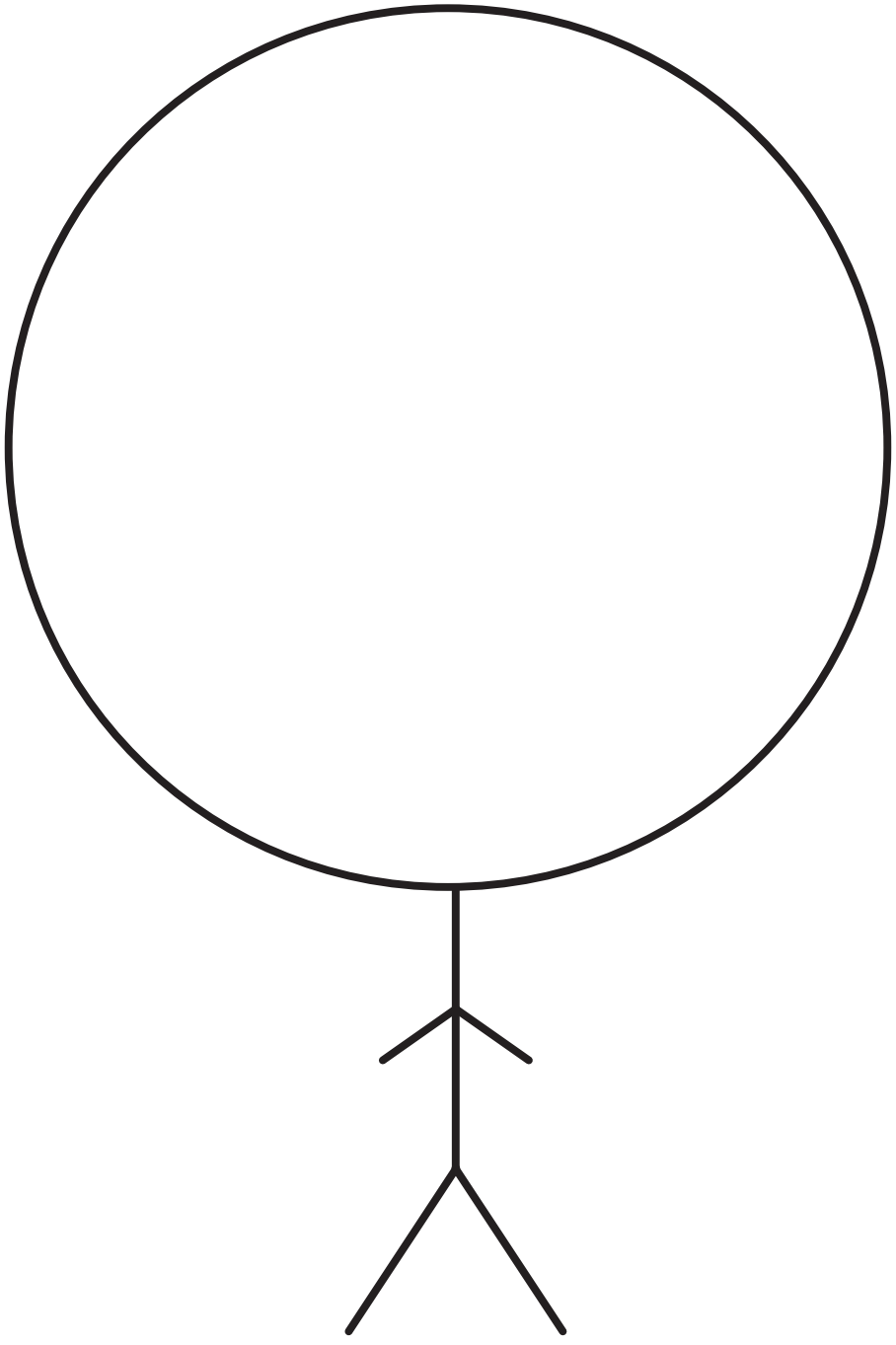
- Optional Student Activity Resource emotions template

FOLLOW-UP

Teacher can refer back to class charts and student work to remind students of strategies when faced with a stressor. Group strategies to become peaceful, calm, and focused can be used routinely to prepare students for learning. A great time to practice these strategies is after lunch or recess. This activity can also act as a link to creating a class community agreement about social responsibilities of community members.

Name _____ **Date** _____

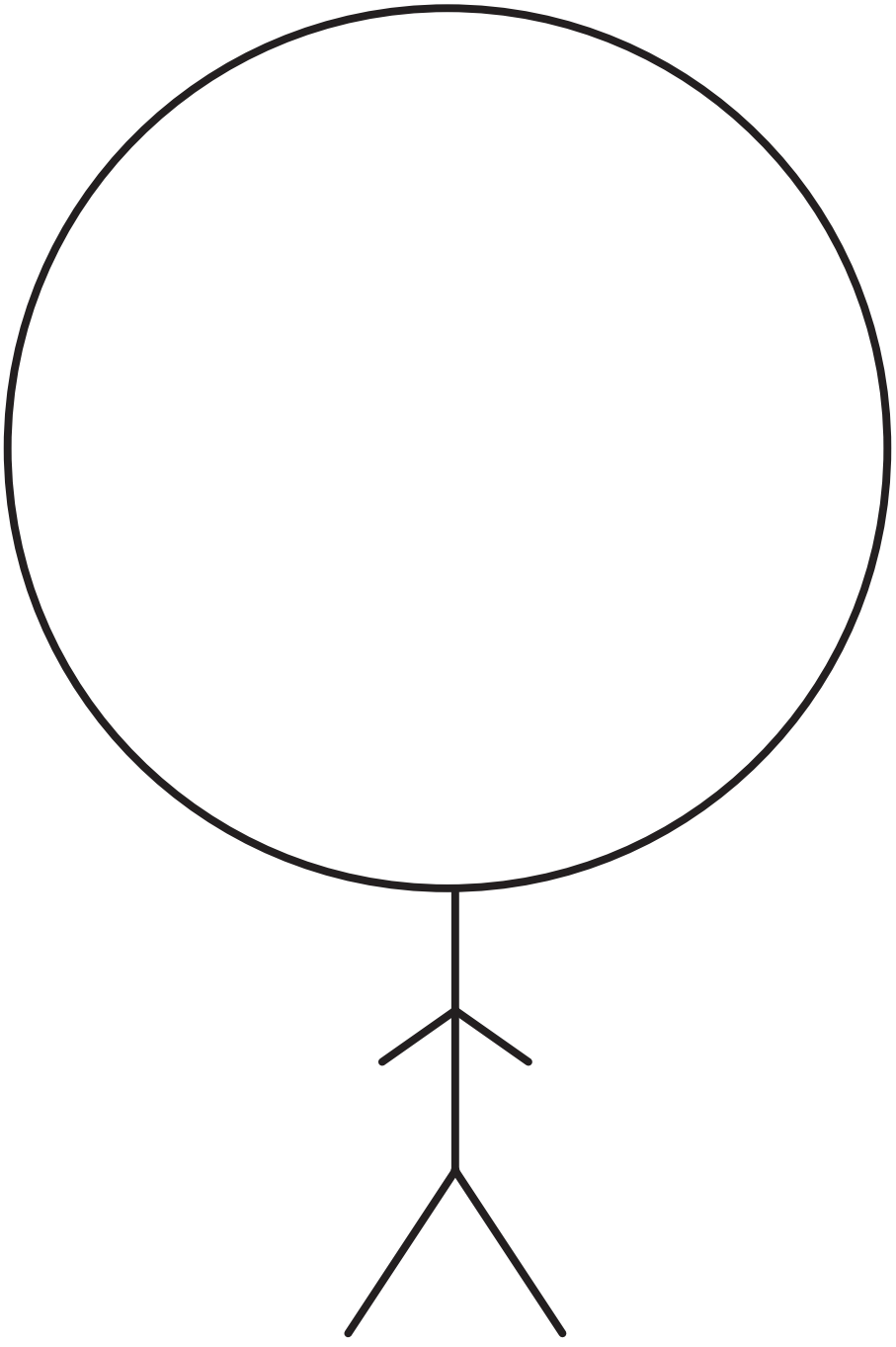
Think about a time when you felt really angry or really scared. Draw what that looked like. Try to include a picture of what happened to make you feel that way.



When I am feeling angry or scared, it looks like this.

Name _____ **Date** _____

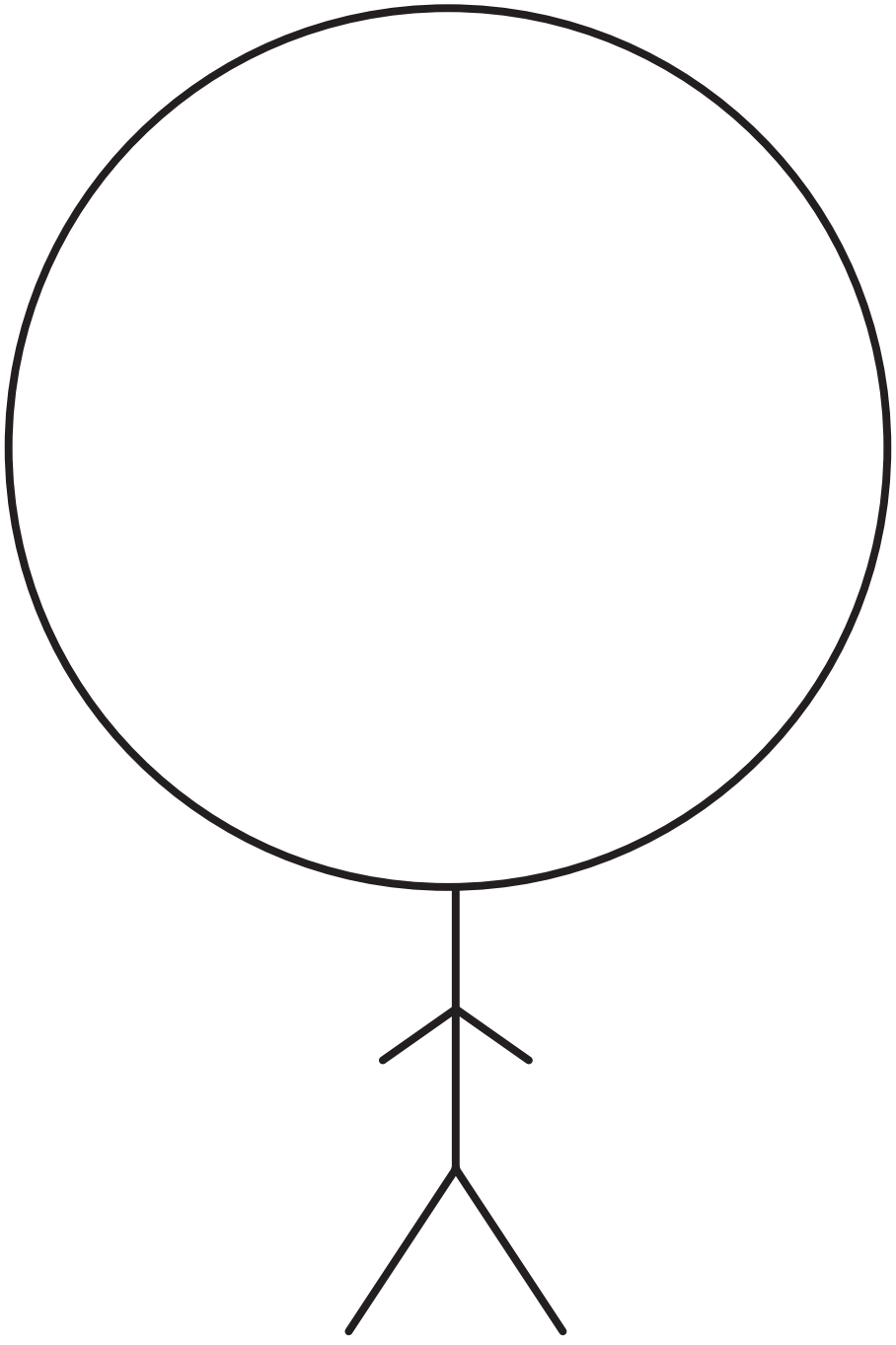
Think about a time when you felt totally happy or peaceful. Draw what that looked like. Try to include a picture of what happened to make you feel that way.



When I am feeling happy or peaceful, it looks like this.

Name _____ **Date** _____

Think about a strategy to help you go from feeling really stressed out to feeling calm and peaceful. Draw what that might look like. What tools would you use?



A strategy to help me go from stressed to peaceful might look like this.

LESSON PLAN

Motivation

GRADE LEVEL: ELEMENTARY

brainchild.com | grades 3, 4, 5

Motivation

Elementary Lesson Plan

OVERVIEW OF ACTIVITY

Students will begin to consider how thoughts and actions contribute to growth mindset or fixed mindset during this activity. With reflection and teacher encouragement, students will begin to foster their own growth mindset.

DURATION

Approximately 1 class period.

STANDARDS ADDRESSED

Common Core Learning Standards in Writing

- **CCSS.ELA-LITERACY.CCRA.W.4** - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Common Core Learning Standards in Math

- **CCSS.MATH.PRACTICE.MP1** - Make sense of problems and persevere in solving them.

OUTLINE OF LESSON

- Teacher introduces topic of Brainchild, motivation.
- Whole class views the "Motivation" episode.
- Students sort various statements to determine whether growth mindset or fixed mindset is exemplified.
- Students reflect on the process with a written response.

ACTIVITY PROCEDURE

- Teacher will explain to students that they will be viewing a show on motivation. Class should briefly activate prior knowledge on the topic with a quick whole group brainstorm.
- Whole class will view the "Motivation" episode with special attention to the segment when kids on the show are participating in a dance game and the piece to follow.
- Teacher should distribute Student Activity Sheets. Whole class will read the introduction to the activity then split off into partnerships to complete the activity, labeling each statement with "F" for fixed mindset, or "G" for growth mindset. Teacher should explain to students that after the sorting, the class will create a

chart to add to and refer to throughout the school year. *Note: For more in depth information on growth mindset, refer to Carol Dweck's work.

- Extension: If certain partnerships finish early, they should be instructed to create their own fixed or growth mindset statements to add to the class chart. Other students could work on rewriting the statements on sentence strips to tape to class chart.
- Whole class will share out the sort, rewriting statements to fit on a class chart. Teacher should facilitate discussions on discrepancies to help students develop an understanding on mindset and how it can help us grow as learners.

FOLLOW-UP

Students will complete a written reflection on growth mindset, responding to the prompt :
Do you feel that you have more of a growth mindset or fixed mindset? Why? Support your answer with details and examples from your life. It is important that we all push ourselves to have a stronger growth mindset. Create a goal for yourself. (Example goal: Even when I feel discouraged, I will practice my flute five nights a week.)

Teacher should refer back to the class chart throughout the year and add student phrases as they come up naturally in the classroom. Teacher should encourage student growth mindset throughout everyday. Teachers can begin to celebrate the struggle in students to foster growth mindset instead of celebrating correct work. Effort should be praised but teachers need to push students to seek out the best way. Teacher can respond to fixed mindset statements or actions by asking, "How can we take that statement/action and give a growth mindset swing to it?"

MATERIALS LIST

- Student Activity Resource
- Chart paper
- Sentence strips

Name _____ Date _____

Motivation: Growth Mindset

In the episode of Brainchild you watched today, after performing poorly on a dance game, students felt defeated and then performed poorly on a word game. This is called **learned helplessness**, when a person feels a sense of powerlessness, that comes from a failure to succeed. This feeling is connected to **fixed mindset**, a belief that your ability is fixed, or stuck, and that you cannot change it.

In school and at home, it has been shown that when you believe that you can grow in all of your abilities, academic, athletic, artistic, etc, you DO! You have the power to work through challenges and always grow. This belief that you can improve your abilities with perseverance is called **growth mindset**. Your brain is like a muscle and the more you use it, the stronger it gets! Today, we will figure out some ways to develop our individual growth mindsets by analyzing the way we might think and behave.

With your partner, sort the following phrases by determining if they model fixed mindset or growth mindset thinking or behavior. You can jot a F or G next to each statement to share with the class.

Statement	**F/G**
I am the worst at writing.	
I was born artistic.	
I love math because you have to problem solve and try out different things to get the right answer.	
That math test was so easy. I didn't even have to study.	
I like writing because I like getting feedback from my classmates and teachers on how to improve and using their advice to make my writing better.	
My writing stinks.	
I am so good at math. I am the best in the class because I have a natural ability.	
I am so frustrated, I can't figure out this problem. I think I'll try a different strategy.	
Athleticism is in my blood.	
I don't know my multiplication facts, but I am going to practice every night to get better.	
I am a pretty good athlete. I train a lot to push myself and get better everyday.	

Name _____ **Date** _____

Statement	F/G
I can come up with an idea in like, a second.	
I don't read out loud because I am so bad at it.	
I came up with an idea but then I thought about how I could make it better, and pushed myself.	
I'm just dumb. I don't know my multiplication facts.	
I give up, I just don't get it.	
My writing is fine, but is there anything I can do to make it better?	
I'm just not musical.	

REFLECTION

Do you feel that you have more of a growth mindset or fixed mindset? Why? Support your answer with details and examples from your life.

It is important that we all push ourselves to have a stronger growth mindset. Create a goal for yourself. (Example goal: Even when I feel discouraged, I will practice my flute five nights a week.)

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LESSON PLAN

Oceans

GRADE LEVEL: ELEMENTARY

brainchild.com | grades 3, 4, 5

i am OTHER NETFLIX ATOMIC ENTERTAINMENT

Oceans

Elementary Lesson Plan

OVERVIEW OF ACTIVITY

Students will use their researching skills to uncover how and why bioluminescence is used by five highlighted sea creatures. Students will record their findings with a labeled diagram and written responses before they share findings with the class.

DURATION

Approximately 1 class period.

STANDARDS ADDRESSED

Next Generation Science Standards

- **3-LS4-3** - Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
- **4-LS1-1** - Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Common Core Learning Standards

- **CCSS.ELA-LITERACY.CCRA.W.4** - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- **CCSS.ELA-LITERACY.CCRA.W.7** - Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

OUTLINE OF LESSON

- Teacher will introduce topic of the Brainchild “Oceans” episode.
- Class will view the “Oceans” episode.
- Students will research bioluminescent sea creatures and consider how the adaptation is used for survival.
- Class will share findings.

ACTIVITY PROCEDURE

- Teacher will activate prior knowledge on oceans, facilitating a class discussion on what students know about them. Teacher will introduce the idea of bioluminescence (if a student has not brought up the topic already). This should not go into too much depth to allow for students to learn more from the “Oceans” episode.

- Whole class will view the "Oceans" episode, with special attention to bioluminescence.
- Whole class can read over the background and directions for the research activity. Teacher should clarify and reteach the concept of bioluminescence and stress the point that it is a survival tool. Students can work in partnerships, small groups, or independently depending on the needs of your group. Teacher should assign particular sea creatures to partnerships, have students circle their creature, and remind students of online researching tips. Assigned sea creatures should be circled or highlighted on the Activity Resource. Be sure students understand that a visual representation with labels, a description of the creature's habitat, and an explanation of bioluminescence as a survival tool are the end goals.
- Students will research the assigned sea creature using classroom resources, primarily computers unless sea creature books are available. Entering the creature name followed with "bioluminescence" or "glowing" into the search engine should help students track down important information. Notes can be taken on the front of the activity resource. *Note: The Caribbean ostracod is the most difficult to research.*
- Teacher cheat sheet:
  - **Vampire squid** use bioluminescence as camouflage to go undetected by prey. They blend in with the light from above. Some sources show that they can also use their bioluminescence to avoid predators as well. They live in the twilight zone and midnight zone.
  - The female **Deep-sea anglerfish** have bioluminescent lures dangling over their heads to bring prey almost right into their mouths. They live in the twilight zone and midnight zone.
  - **Comb jellies** emit glowing particles into the water in order to mimic plankton, confuse a predator, or produce a flash of light to startle a predator. They live in the sunlight zone.
  - **Caribbean ostracod** perform a light show to attract a mate. They live in the sunlight zone.
  - **Lanternfish** use bioluminescence that comes from their sides, obscuring their silhouette so that potential predators do not detect them. They live in the twilight zone by day but have been known to come to the sunlight zone to feed in the night.
- Teacher will facilitate a share out of each sea creature, their habitat, and how bioluminescence is used for survival.

FOLLOW-UP

Students will edit and revise their written responses and make final touches on their diagrams for homework or during another class period.

MATERIALS LIST

- Student Activity Resource, 1 per student
- Computers for research

Name _____ **Date** _____

Oceans: Bioluminescence

Today you learned that bioluminescence is the production and emission of light by a living organism from the "Oceans" episode of Brainchild. In all of the depths of the ocean, many sea creatures use their bioluminescence for survival. Some use bioluminescence to **attract a mate**, others use it to **fend off predators**, and others **lure in or trick their prey**.

You will use our classroom resources to research one of the following bioluminescent sea creatures:

Vampire squid
Deep-sea anglerfish
Comb jellies
Caribbean ostracod
Lanternfish

Use this space to take notes as you research.

Name _____ **Date** _____

Draw and label the sea creature.

1. Describe the creature's habitat.

2. How does this creature use bioluminescence to survive in their habitat (attract a mate/ fend off predators/ capture prey)? What could happen if the creature was not bioluminescent? Support your response with clear details and facts from your research.

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LESSON PLAN

Thinking

GRADE LEVEL: ELEMENTARY

brainchild.com | grades 3, 4, 5

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Thinking
Elementary Lesson Plan

OVERVIEW OF ACTIVITY

Students will play a game solving riddles and determining which brain system was used to answer each riddle. They will reflect upon the concepts in a written assignment to follow up the game.

DURATION

Approximately 1 class period.

STANDARDS ADDRESSED

Common Core Learning Standards in Mathematics

- **CCSS.MATH.CONTENT.3.OA.D.9 -** Identify arithmetic patterns.
- **CCSS.MATH.CONTENT.4.OA.C.5 -** Generate and analyze patterns.
- **CCSS.MATH.CONTENT.5.OA.B.3 -** Analyze patterns and relationships.

Common Core Learning Standards in Writing

- **CCSS.ELA-LITERACY.CCRA.W.1 -** Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.

OUTLINE OF LESSON

- Teacher will introduce the topic of thinking.
- Whole class will view the Brainchild "Thinking" episode.
- Students will play *Riddle Me This* in partnerships.

ACTIVITY PROCEDURE

- Teacher will facilitate a discussion on thinking, the topic of the episode. The objective is to simply activate prior knowledge to help students better engage with the content.
- Whole class will view the "Thinking" episode. Teacher should verbally queue students to pay close attention to the System 1 and System 2 segment of the show.
- Teacher will review that **System 1** is fast, impulsive, and automatic, while **System 2** is calm, calculated, and takes more effort. You will play "Riddle Me This" with your partner and decide whether the riddle was solved using System 1 or System 2. For each riddle, students will need to either fill in the missing word, fill in the missing number to a pattern, or figure out what the words have in common.

- In partnerships, students will play *Riddle Me This*. The objective of this game is for students to begin identifying whether System 1 or System 2 was used to solve a given riddle. See the Activity Resource for full description. Students requiring an extra challenge can also create their own riddle cards to add to the game set.
- Teacher will facilitate a reflection on findings. There may be variation across students on whether a given riddle was solved using System 1 or System 2 (for example, a student who is a juice connoisseur may use System 1 for Riddle 10, and a student who is not may use System 2). These areas should be discussed.
- Depending on the maturity of a group, a conversation could potentially be steered to discussed how stereotypes, when firmly ingrained, can become System 1 responses which require System 2 thought processing to be fair and just.

FOLLOW-UP

Students will complete the written piece as an in class follow-up to the "Thinking" episode, to reflect on how System 1 and System 2 support them in their daily lives.

MATERIALS LIST

- Student Activity Resource: 1 game set per partnership, 1 follow-up sheet per student

Name _____ **Date** _____

Thinking: Riddle Me This

During the "Thinking" episode of Brainchild, you learned about the different systems of thinking. System 1 is fast, impulsive, and automatic, while System 2 is calm, calculated, and takes more effort. You will play "Riddle Me This" with your partner and decide whether the riddle was solved using System 1 or System 2. For each riddle, you will need to either fill in the missing word, fill in the missing number to a pattern, or figure out what the words have in common.

DIRECTIONS

1. Cut up your cards. Don't peak at the cards!
2. Mix up the cards and split them into two equal groups, one for each partner.
3. Partner One will read one card from his or her pile to Partner Two. Don't show your partner the card, the answers are on them!
4. Partner Two will answer the riddle and name whether she or he used System 1 or System 2 to solve and receive one point for the correct response. Partners will record the riddle number in the System 1 or System 2 column.
5. Partners will take turns solving each riddle.
6. The partner with the most points will win the game.

	Tally Points	Total Points
Partner 1:		
Partner 2:		

System 1	**System 2**
Example: Riddle 1	*Example: Riddle 27*

Name _____ Date _____

Riddle Me This Cards

Riddle 1 **6, 8, 10, 12, _____** (14)	Riddle 2 **Blueberry Corn Chocolate chip Apple cinnamon** (types of muffins)	Riddle 3 **199, 192, 185, 178, 171, ____** (164)	Riddle 4 **Sandal Sneaker Boot Flip flop** (types of footwear)	Riddle 5 **144, 156, 168, 180, 192, _____** (104)
Riddle 6 **Chocolate chip cookie dough Strawberry Vanilla Cookies and cream** (types of ice cream)	Riddle 7 **65, 70, 75, 80, _____** (85)	Riddle 8 **Tea Coffee Hot chocolate Apple cider** (hot beverages)	Riddle 9 **173, 187, 201, 215, 229, _____** (243)	Riddle 10 **Carrot Apple Orange Grape** (types of juice)
Riddle 11 **Pine Poplar Oak Cedar** (types of trees)	Riddle 12 **Uncle Aunt Grandma Cousin** (family members)	Riddle 13 **Ketchup Mustard Relish Sauerkraut** (things you put on hotdogs)	Riddle 14 **Lettuce Tomatoes Pickles Onion** (things you put on hamburgers)	Riddle 15 **Fingers Cakes Cows Chickens** (ending in the letter s)
Riddle 16 **Freedom Cry Croissant Crayon** (second letter r)	Riddle 17 **Umbrella Apple Earring Offshore** (beginning with vowels)	Riddle 18 **____ blower ____ man ____ shovel ____ cone** (snow)	Riddle 19 **140, 150, 160, 170, _____** (180)	Riddle 20 **____ fighter ____ cracker ____ place ____ truck** (fire)
Riddle 21 **Mom Hannah Radar Level** (palindromes, same word spelled backwards)	Riddle 22 **36, 45, 54,63, 72, ____** (81)	Riddle 23 **Earth Heart** (anagrams, words using the same letters)	Riddle 24 **Rotates Toaster** (anagrams, words using the same letters)	Riddle 25 **92, 94, 96, 98, 100, ____** (102)
Riddle 26 **16, 32, 48, 64, 80, _____** (96)	Riddle 27 **Kayak Racecar Madam Wow** (palindromes, same word spelled backwards)	Riddle 28 **48, 56, 64, 72, _____** (80)	Riddle 29 **Dolphin Seal Walrus Dog** (mammals)	Riddle 30 **Iguana Chameleon Turtle snake** (reptiles)

Name _____ Date _____

Thinking: Think Fast (A)

How does **System 1** help you in your daily life? Support your thinking with specific details.

How does **System 2** help you in your daily life? Support your thinking with specific details.

LESSON PLAN

Hidden Forces

GRADE LEVEL: ELEMENTARY

brainchild.com | grades 3, 4, 5

Hidden Forces

Elementary Lesson Plan

OVERVIEW OF ACTIVITY

These centers are designed as a hands on introduction to the concepts of electricity by building a circuit, gravity by observing the time it takes for simple objects to fall, and magnetism by using magnets to test for magnetism, alongside the "Hidden Forces" episode to begin a forces unit. These center activities are designed to be completed within two class periods or one class period if isolating only one force.

DURATION

This collection of activities can be used as a two class period activity using all of the provided centers or as a one class period activity if teacher chooses to isolate the forces.

STANDARDS ADDRESSED

Next Generation Science Standard

- **3-PS2-3 -** Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.

Common Core Learning Standards in Writing

- **CCSS.ELA-LITERACY.CCRA.W.4 -** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

OUTLINE OF LESSON

- Teacher will access student prior knowledge.
- Whole class will watch the Brainchild "Hidden Forces" episode.
- Whole class will rotate through three exploratory stations with written components.

ACTIVITY PROCEDURE

- **Introduction to concepts:** Teacher will access student prior knowledge by charting what they know about forces. After charting prior knowledge, teacher will introduce vocabulary: gravity, electricity, magnetism.
- Class will view the "Hidden Forces" episode.
- Teacher will introduce one or all of the following centers. Each center will most likely require a model from an adult in the classroom. Students should be broken up into groups of 2-3.

- **Center Descriptions** *(see student resources for more details)*

  - **Center 1: Gravity** - Drop It - students will receive multiple objects (4), all of different masses (teachers can pre-record mass or provide a digital scale). Students will drop objects at the same time from the same distance to discover that, no matter the mass, gravity acts upon all objects uniformly. Observations written should include order of objects hitting the floor.
    Materials list: small and large binder clips, paper clip, pencil, golf ball, pingpong ball, Student Activity Resource.

  - **Center 2: Magnetism** - Students will receive 4-6 objects: half magnetic, half non-magnetic. One object will be another magnet. Students will investigate magnetic properties of common materials by observing and recording whether each object is attracted to the magnet. Students will note trends and further observations.
    Materials list: two magnets, paperclip, wooden block, penny, magnet, plastic straw, iron nail, Student Activity Resource.

  - **Center 3: Electricity** - Build a Circuit - Distributing Electricity through Powerline (wire). Students will receive battery, wires, and light bulb with connectors and instructions. With these materials, you can make this light bulb light. Work with your partner to try and achieve this goal. You may choose to provide students with a circuit diagram as free exploration may pose challenges. **Special instruction, do not touch tip of alligator clips**
    Materials list: small light bulb, 2 batteries (with the correct voltage for your light bulb), 2 alligator clip wires, bulb holder, battery holders, Student Activity Resource.

FOLLOW-UP

Students will complete the student resource page, revisiting each “conclusion” section to reflect on the centers. These centers are intended to lead into the forces school curriculum.

Name _____ Date _____

Forces: Gravity

In the "Hidden Forces" episode of Brainchild, you learned about gravity. You will continue your learning with this activity!

PURPOSE

You will predict how different objects will fall in Earth's gravitational field, collect data and draw conclusions.

HYPOTHESIS

Will different objects (look at your data table) hit the ground at different times when dropped from the same height? Explain your reasoning.

_____

_____

_____

PROCEDURE

1. One partner will hold the two objects at the same height while standing.

2. The second partner will lay on the floor at eye level where the objects will fall.

3. When both partners are ready, the objects are dropped. Record observations in your data table.

Object Pairs	Mass (g)	Observations
Large/small binder clips	/	
Tennis ball/golf ball	/	
pencil/paper clip	/	

CONCLUSION

What do you notice about the object, its mass, and how fast it reaches the floor?
What does that tell you about gravity?

_____

_____

_____

Name _____ **Date** _____

Forces: Magnetism

In the "Hidden Forces" episode of Brainchild, you learned about magnetism. You will continue your learning with this activity!

PURPOSE

You will explore the magnetic properties of common substances. Students will draw conclusions about the properties of magnetic and non-magnetic substances.

Complete the chart below by checking the box to indicate whether an object is magnetic or non-magnetic.

Object	Magnetic	Non-magnetic
Paperclip		
Wooden block		
Penny		
Magnet		
Plastic straw		
Iron nail		

CONCLUSION

Based on your observations, list other common materials you think might be magnetic or non-magnetic. Be sure to provide your explanation at the end!

Magnetic	Non-magnetic

Explanation:

_____

_____

_____

_____

Name _____ **Date** _____

Forces: Electricity

In the “Hidden Forces” episode of Brainchild, you learned about electricity. You will continue your learning with this activity!

PURPOSE

Students will discover how to complete a circuit in order to make a light bulb light.

PROCEDURE

1. You will receive battery, wires, and light bulb with connectors.

2. With these materials, you can make this lightbulb light.
   Work with your partner to try and achieve this goal.

CONCLUSION

Based on your observations, what must be true of the circuit for the light bulb to light up?

_____

_____

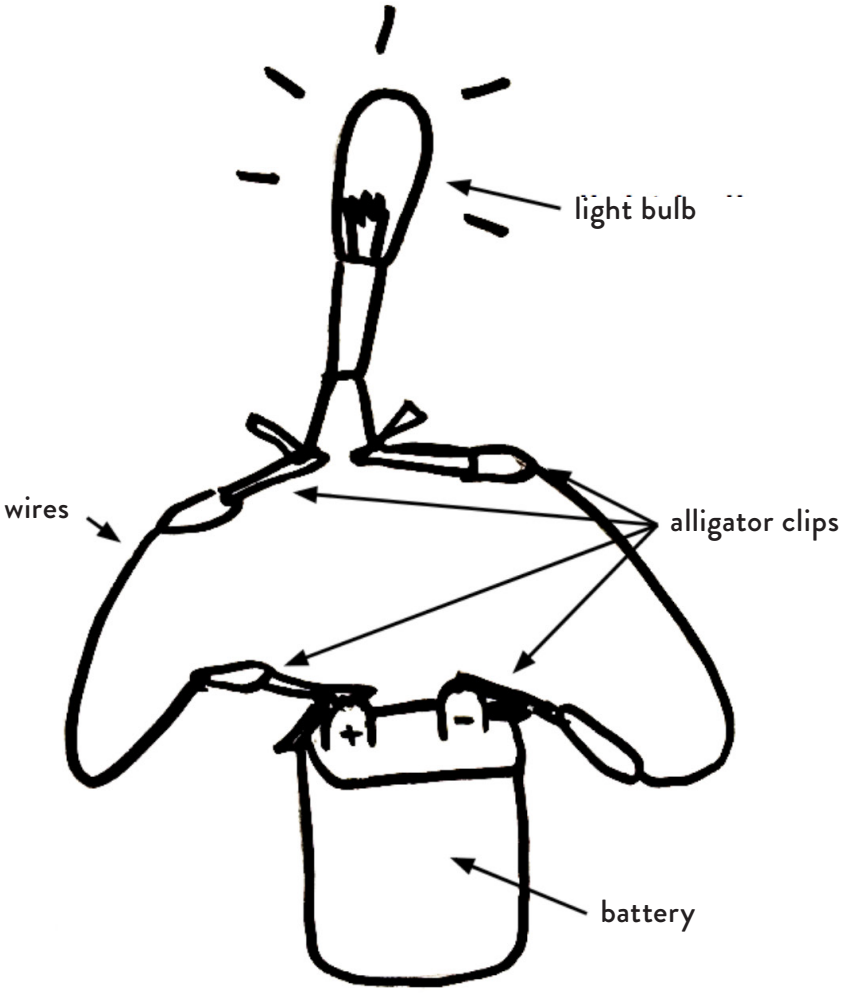
_____

_____

Draw your circuit. Use labels.

Name _____ Date _____

Circuit Diagram



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LESSON PLAN

Creativity

GRADE LEVEL: ELEMENTARY

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Creativity

Elementary Lesson Plan

OVERVIEW OF ACTIVITY

Students will challenge their thinking to come up with creative ways to sort and resort common nouns. This activity is designed to encourage students to use out of the box thinking, even when there is a seemingly easy solution already. *This activity is easily adaptable to current unit vocabulary. Teacher can create a supplementary vocabulary list to match content to replace Student Activity Resource list.

DURATION

Approximately 1 class period with a follow up discussion.

STANDARDS ADDRESSED

Common Core Learning Standards in Literacy

- **CCSS.ELA-LITERACY.CCRA.SL.1** - Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

OUTLINE OF LESSON

- Access prior knowledge.
- View the Brainchild "Creativity" episode.
- Sorting and resorting activity to challenge creativity.
- Verbal reflection of activity.

ACTIVITY PROCEDURE

- Teacher will introduce the topic of the "Creativity" episode and have students share what they know about creativity, activating prior knowledge.
- Whole class will view episode.
- Teacher will facilitate a discussion on out of the box thinking, what it means to students and how it connects to what they learned about creativity during Brainchild.

- Teacher will introduce activity and facilitate a shared reading of the activity introduction. *"In the Brainchild episode, "Creativity", you learned that there are many ways we can heighten our creativity by looking at the world in a different way, or changing our perspective. We can also call this* ***thinking outside of the box.*** *Often times, when we are faced with a problem, we use primarily our left brain, or logical thinking. When we push ourselves to think outside of the box, we can often harness more creative, right brain solutions."* Teacher will walk students through the steps of the activity, explaining that there is no one answer, nor one right answer. It is an activity to model how your out of the box thinking can develop with practice.
- Students will cut sorting cards and begin the activity. They can use sticky notes to keep track of categories before they record them on their Student Activity Resource. Some potential categories include living things, nonliving things, mammals, reptiles, amphibians, plants, things in a workshop, clothing, vehicles, toys, things with legs, things with a head, things found inside, and things found outside.

FOLLOW-UP

Students can complete the reflection for homework and the teacher should lead a follow up discussion surrounding reflections. Students should verbally share their reflection first with their partner. The partner should pose questions to help elaboration of thinking. Then, entire class should engage in a reflective discussion. Be sure students have an understanding of the benefits of out of the box thinking, becoming better thinkers, coming up with better strategies, and learning more about the world around them.

MATERIALS LIST

- Student Activity Resource: 1 per student
- 1 set of sorting cards per partnership
- Sticky Notes

Name _____ Date _____

Creativity: Thinking Outside of the Box

In the Brainchild episode, "Creativity," you learned that there are many ways we can heighten our creativity by looking at the world in a different way, or changing our perspective. We can also call this **thinking outside of the box**. Often times, when we are faced with a problem, we use primarily our left brain, or logical thinking. When we push ourselves to think outside of the box, we can often harness more creative, right brain solutions.

DIRECTIONS

- Cut out sort words.
- Work with a partner to make categories to fit all of the words.
- Write down your categories.
- Try sorting them again with different criteria. Try to push yourself to think more creatively.
- Write down the new categories.
- Continue to create and record variations of categories.
- Complete reflection.

Sort 1 Categories: _____

Sort 2 Categories: _____

Sort 3 Categories: _____

Sort 4 Categories: _____

REFLECTION

How did this activity help you to think outside of the box? What real world situation could improve with more out of the box thinking?

_____

_____

_____

_____

Name _____ Date _____

Creativity: Thinking Outside of the Box

cat	screwdriver	swings	hat
lizard	dog	bike	pants
scooter	sweater	snake	work bench
beachball	bus	baby	slide
level	salamander	nails	tadpole
peach tree	hammer	socks	toad
frog	block	trucks	pine tree

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LESSON PLAN

Memory

GRADE LEVEL: ELEMENTARY

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Memory

Elementary Lesson Plan

OVERVIEW OF ACTIVITY

Students will team up to try out different strategies for remembering the name and function of the parts of a plant, in the activity, Who's Got the Best Study Strategy? Based on their outcomes, students will come away with better study habits that will help them retain more information!

DURATION

Approximately 1 class period

STANDARDS ADDRESSED

Next Generation Science Standards

- **4-LS1-2** - Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.
- **4-LS1-1** - Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

OUTLINE OF LESSON

- Introduction to the topic of memory.
- Class views the Brainchild "Memory" episode.
- In teams, students try our different strategies for retaining information in Who's Got the Best Study Strategy?
- Quiz to determine which strategy was most successful.

ACTIVITY PROCEDURE

- Teacher will introduce the topic of the "Memory" episode. Students will share out what they think they already know about memory. Teacher can steer thinking towards memory for the sake of studying.
- Whole class will view the "Memory" episode while considering what might be helpful in building study habits.
- Teacher can project first paragraph of the Student Activity Resource and read as a whole class. ***"After viewing the "Memory" episode on Brainchild, you probably have a lot of ideas on how to remember things with greater accuracy. In this activity, you will be working in teams to see what strategy for retaining***

the name and function of parts of a plant is most successful. Members of the class will try out flashcards, visualizing, drawing and labeling, matching, and motions as study strategies. Each team is only allowed to use the strategy assigned and we will have a quiz to see which strategy was the most successful!"
The strategies can be recorded on chart paper for later reflection.
Note: This activity can be adapted to fit whatever content teachers are currently studying.

- Students should be split into heterogeneous strategy teams. Students must choose a team reader to read over the directions to their team aloud while the team follows along on their own sheet. Teacher will then distribute the Student Activity Resources.
- Each team will follow the directions for their strategy, flashcards, visualizing, drawing and labeling, matching, or motions, and all but 5-10 minutes of the remaining period to study. Time permitting, teacher could leave the entire period and continue study strategy for homework, administering the quiz the following day.
- The last 5-10 minutes will be used for a quiz. Teacher should explain that it's alright if students don't feel quite ready yet. The results only count for determining what strategy was most successful.
- Students will work independently to complete the quiz. Teacher should calculate results and share with the class the following day.

FOLLOW-UP

Based on the results, the class will have a good idea of best practices for studying. Teacher should hold a class discussion on each strategy and chart the different strategies, noting benefits and possible drawbacks for each. Discussion may move towards determining what strategies could work best for particular content (spelling/ math facts/ science form and functions). The discussion should also touch on the consistent piece throughout all strategies, repetition, or continued practice is essential.

This activity should provide students with many different study strategies to take with them throughout their education. Teacher might assign further studying of the parts of a plant and function for homework using any of the presented strategies and administer the quiz the following day.

MATERIALS LIST

- Student Activity Resource
- Index cards
- Scissors
- Paper
- Chart paper

Name _____ Date _____

Memory: Who's Got the Best Study Strategy?

After viewing the "Memory" episode of Brainchild, you probably have a lot of ideas on how to remember things with greater accuracy. In this activity, you will be working in teams to see what strategy for retaining the name and function of parts of a plant is most successful. Members of the class will try out flashcards, visualizing, drawing and labeling, matching, and motions as study strategies. Each team is only allowed to use the strategy assigned and we will have a quiz to see which strategy was the most successful!

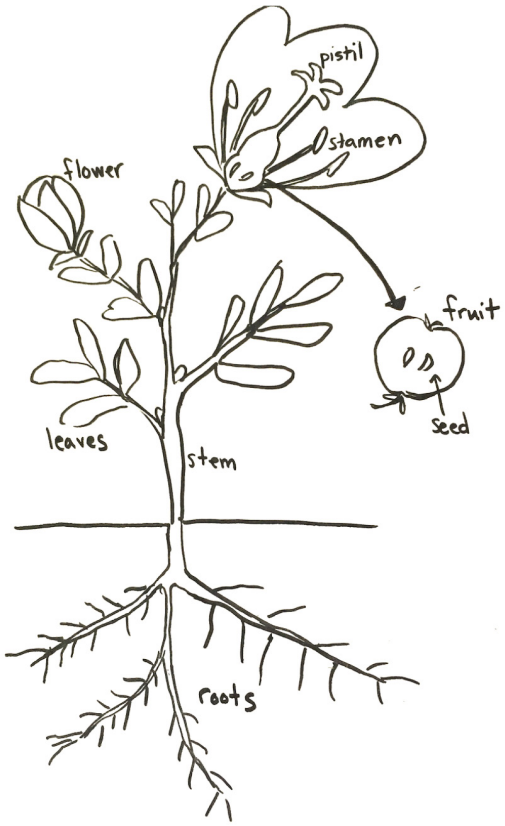
YOUR STRATEGY: FLASHCARDS

Flashcards are a classic method of studying to retain new information. Here's what you do. On one side of the card, you write the part of the plant. On the other side, you write all of the important information. You will quiz yourself or a partner, reading the name only, and trying to recall the function on your own. If you're stuck, you can sneak a peek, but the goal is to do your flashcards so many times, that you memorize them all. The more you practice, the more information you'll retain!

Parts of Plant Vocabulary and Function

Roots grow into soil, secure the plant into ground, and absorb water and nutrients from the soil.

The **stem** is the vessel for water and nutrients to reach the entire plant. It helps the plant get closer to the sunlight and acts as a support for the plant to stand up, helping the leaves become exposed to the sun's light.



Leaves are attached to the stem. They make food for the plant using water, absorbed sunlight, chlorophyll, and carbon dioxide in the process called **photosynthesis**. The plant releases oxygen during the process.

The purpose of a **flower** is reproduction. The flower **petals** protect the reproductive organs and also attract insects to help spread pollen. Stamens and pistils can be found on most flowers. The **stamen** is the male part of the flower. There are multiple stamen that produce pollen surrounding the **pistil**, the female center of the flower which produces the seeds.

The **fruit** of a plant protects the seed and attracts animals to eat in order to disperse seeds to produce new offspring.

The **seed** is the undeveloped new plant containing stored food for when it begins to grow into the plant.

Name _____ Date _____

Memory: Who's Got the Best Study Strategy?

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YOUR STRATEGY: DRAWING AND LABELING

Using your creative side can often help you remember important information. For this study strategy, draw a picture of a plant, then carefully label and write out the function of each part of the plant. If you finish, read over your work, and do it again! The more you practice, the more information you'll retain!

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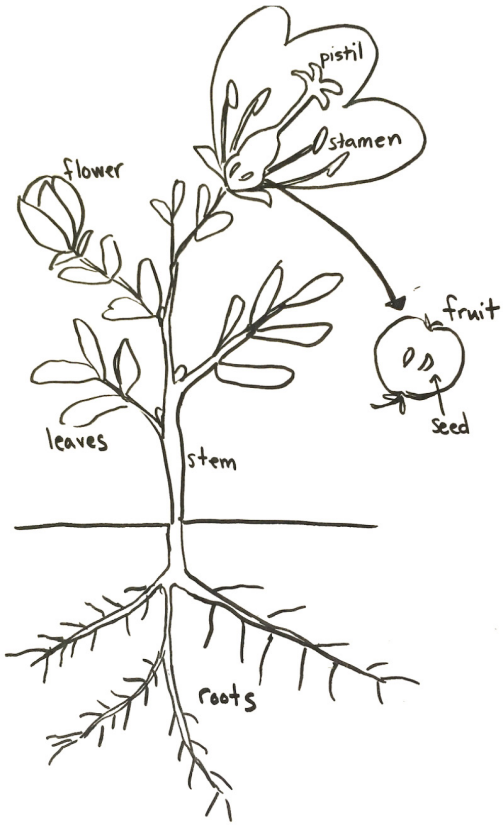

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YOUR STRATEGY: VISUALIZING

Making a picture in your mind can often help retain important information. For this strategy, you will need a partner. You will take turns talking your partner through a visualization strategy from the top of a plant to the bottom. The person speaking will describe every bit of the image of a plant and talk through each function as her or his partner imagines it. If you are visualizing, your eyes are closed and you are truly picturing the plant in your mind as you pay attention to your partner's words. If you finish, do it all over again! The more you practice, the more information you'll retain!

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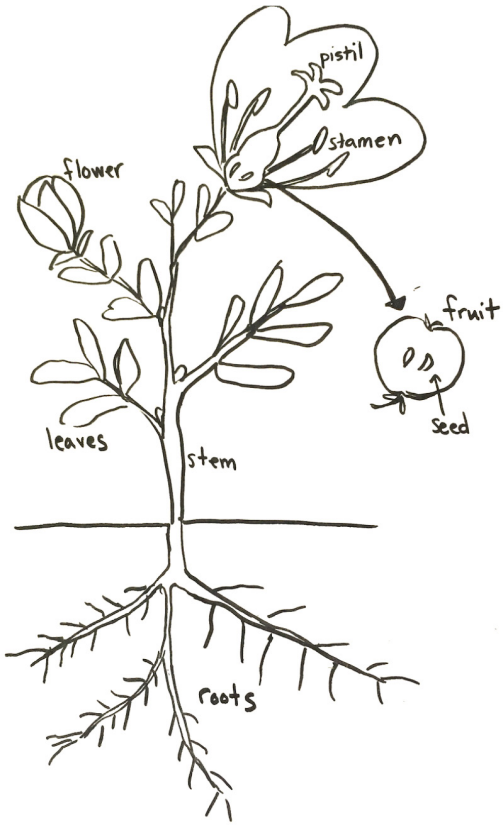

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YOUR STRATEGY: MATCHING MEMORY GAME

We all know how to play memory matching cards that are exactly the same, but for this strategy, you will be matching the plant part and its function. Cut out your cards and start playing! If you finish the game, play again! The more you practice, the more information you'll retain!

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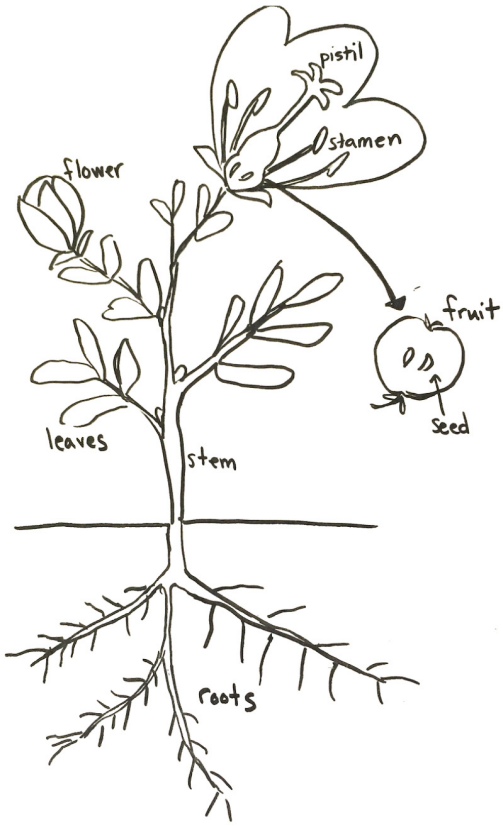

Name _____ Date _____

Roots	_____ grow into soil, secure the plant into ground, and absorb water and nutrients from the soil.
Stem	The _____ is the vessel for water and nutrients to reach the entire plant. It helps the plant get closer to the sunlight and acts as a support for the plant to stand up, helping the leaves become exposed to the sun's light.
Leaves	_____ are attached to the stem. They make food for the plant using water, absorbed sunlight, chlorophyll, and carbon dioxide in the process called photosynthesis. The plant releases oxygen during the process.
Flower	The brightly colored part of a plant, the purpose of a _____ is reproduction. Petals, stamens and pistils can be found on most flowers.

Name _____ Date _____

Petals	The flower _____ protect the reproductive organs and also attract insects to help spread pollen.
Stamen	The _____ is the male part of the flower. There are multiple stamen that produce pollen surrounding the pistil.
Pistil	The _____ is the female center of the flower which produces the seeds.
Fruit	The _____ of a plant protects the seed and attracts animals to eat in order to disperse seeds to produce new offspring.
Seed	The _____ is the undeveloped new plant containing stored food for when it begins to grow into the plant.

Name _____ Date _____

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YOUR STRATEGY: MOTIONS PAIRED WITH PARTS AND FUNCTIONS

When we pair learning with movement, it's called kinesthetic learning, and it is a known way to retain more information. To study the parts and functions of a plant using kinesthetics, you will read the part of the plant and its function and do the motion described as you read it. Your group might want to choose a leader to read and follow, repeating the name, function, and copying the leader's motion. After you have gone through all of the parts, do it again, and again, and again...The more you practice, the more information you'll retain!

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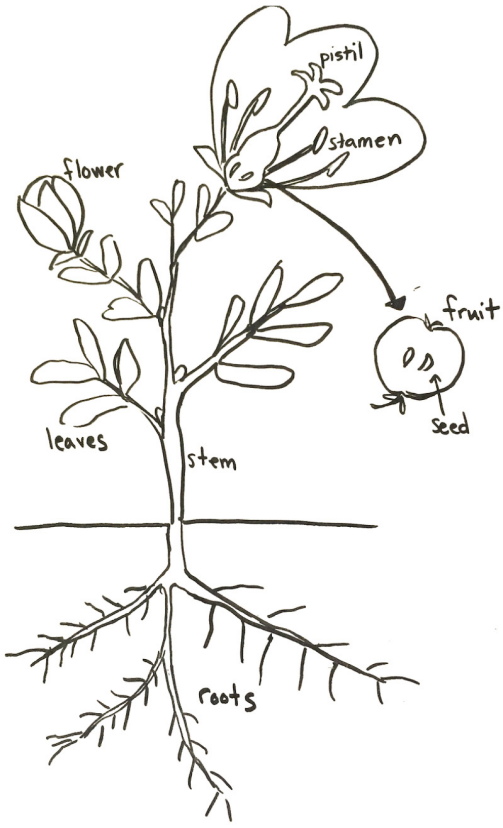

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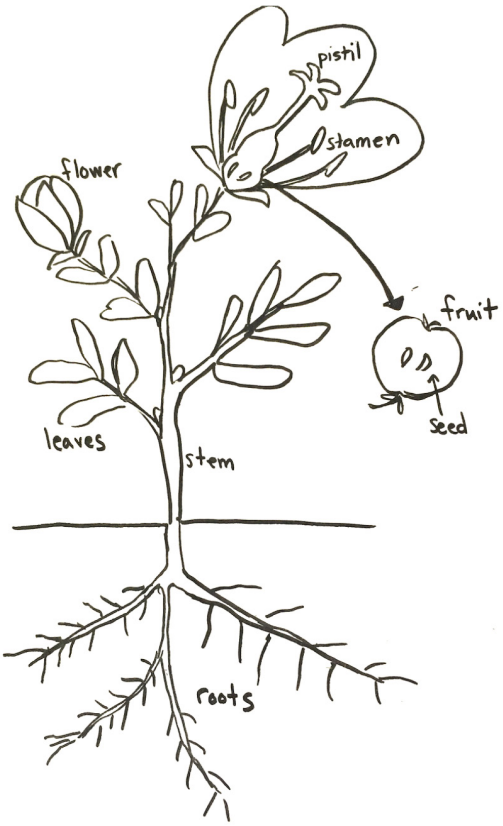
Name _____ Date _____

QUIZ: Who's Got the Best Study Strategy?

Study Strategy: _____

Label and record the function of each part of the plant.



1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

LESSON PLAN

Beat the Parents

GRADE LEVEL: ELEMENTARY

brainchild.com | grades 3, 4, 5

Beat the Parents

Elementary Lesson Plan

OVERVIEW OF ACTIVITY

Students will use their creativity and common materials to engineer the loudest instrument, making the connection between volume, amplitude and sound waves.

DURATION

Approximately 1 class period.

STANDARDS ADDRESSED

Next Generation Science Standards

- **4-PS4-1** - Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.
- **PS4.A** -Wave Properties. Waves of the same type can differ in amplitude (height of the wave) and wavelength (spacing between wave peaks).
- **3-5-ETS1-2** - Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

OUTLINE OF LESSON

- Introduction to sound waves.
- View the Brainchild "Beat the Parents" episode.
- Students engineer instruments, determine which is loudest.
- Draw a diagram and reflect on process.

ACTIVITY PROCEDURE

- Teacher will explain that class will be viewing a Brainchild episode that touches on many fun topics, including sound waves. Class can chart what they think they know about sound waves.
- Class will view the "Beat the Parents" episode and pay special attention to the clip on hearing.
- Teacher will introduce the concepts of sound traveling as waves, amplitude, and volume:
  In the Brainchild episode, "Beat the Parents," we learned a bit about hearing and sound frequency. We are going to think about how sound gets into our ears. Anyone have an idea of how sounds gets to our ears? Students can share out ideas. ***It travels in waves, like the waves in the ocean. Only sound waves go through air and we***

cannot see them. When the sound waves make it to our ears, they vibrate the air around them and the anatomy inside them, creating a sound. When we hear a very loud sound, it has a large amplitude. The top of the wave is far from the bottom of the wave. Teacher should draw a sound wave. ***A soft sound has less distance between the top and bottom.***

Today, you are going to have a chance to make instruments using some everyday objects and see who can create an instrument to produce the loudest sound. That means it is a contest to see who can make the biggest sound waves, or the sound waves with the greatest amplitude.

- Teacher will send students off in small groups to engineer an instrument. Upon completing one instrument, the teacher should instruct students to try and change a component of their piece to make it louder. This may or may not be successful, however the prompted changes will encourage students to expand upon their engineering skills.
- Each small group should have a chance to share out their design, first explaining the process of creating the instrument (did they try different designs first before determining the best design?).
- Class can then determine which instrument was the loudest, with the highest amplitude, making the connection to different wave diagrams to represent each. This will give them a chance to prepare for the homework or follow-up.

FOLLOW-UP

Students will make final touches on their instrument diagram and complete the follow-up drawing of the possible sound waves made from the loudest and softest instruments.

MATERIALS LIST

- Student Activity Resource
- Household materials for each group to make instruments: paper towel rolls, cardboard boxes, rubber bands, tape, paper or plastic cups, beads, beans, popsicle sticks, bottle tops, wax paper, cans (without any sharp edges)

Name _____ **Date** _____

Beat the Parents: Designing Instruments

During the "Beat the Parents" episode of Brainchild, you learned that sound travels through the air in waves. A sound wave's height, or amplitude, determines how loud it is. Let's see how you can design an instrument with a high amplitude!

In the space below, draw a diagram of the first instrument you created. Label the materials you used. Then, draw and label the instrument after you modified it to attempt to make it louder.

How did the physical design changes you made affect the sound of your instrument? Why do you think the sound was affected?

Name _____ **Date** _____

During class today, you had a contest of who could create the loudest instrument. Think about how the amplitude of the sound wave from the loudest instrument might look like in comparison to the quietest instrument made. Draw them below.

Loudest instrument's soundwave:

Quietest instrument's soundwave: