COLLABORATE

A collaborative guide and lessons for grades K-12



This guide provides helpful information on creating your own collaborative classroom. We offer a number of engaging collaborative lessons, organized by grade level and subject area. All lessons meet the Common Core State Standards, include tips, and can be used with or without educational technology.

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Collaborate to the Core

Today's pedagogy in K-12 education has shifted towards a cross-curricular, collaborative approach to learning, in which the emphasis is on assessing understanding and knowledge, rather than rote memorization of facts. To be truly successful, students now need to have a deep comprehension of concepts and develop 21st century skills like critical thinking and collaboration. Keeping up with these new requirements has sent whirlwinds of change across K-12 education. Group learning and student-centric approaches are increasingly replacing textbooks, lectures, and note-taking.

Recognizing this pedagogical shift, the National Governors Association and the Council of Chief State School Officers undertook the Common Core State Standards (CCSS) Initiative, a project that developed K–12 reading and math standards designed to engender in-depth conceptual understanding from the early grades onward. Since May 2010, all Common Core State Standards have been adopted by 45 states, the District of Columbia, and four territories; and Minnesota has adopted the CCSS for English Language Arts. Race to the Top funding for innovation and reform has replaced No Child Left Behind accountability mandates.

Education is moving away from "teaching to the test" toward teaching for learning's sake. Best teaching practices now consist of cross-curricular instruction and project-based, student-centric, collaborative approaches that capture students' interest and boost their ownership of the learning experience. This collaboration guide will take you through a variety of techniques and suggestions to create collaborative learning in your classrooms – with or without educational technology.



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THE COLLABORATIVE CLASSROOM

Establishing a collaborative environment in classrooms is a key method of empowering students to live and thrive in the real world. Discussion, cooperation, open-mindedness, a variety of viewpoints, higherorder thinking skills, different curricular areas, disagreement, and debate are all elements that help students learn how to collaborate with others and thus become better educated individuals.

But how do educators incorporate collaborative learning models into their instruction? A number of strategies have been recommended by TeachThought.com. Teachers should begin by setting expectations for students, clearly explaining the process, and actually teaching effective collaboration strategies, including the following:

- Listen to others
- Establish common goals
- Compromise
- Assign roles and responsibilities
- Determine measures for accountability
- Give constructive feedback
- Assess the group's progress

At the outset, the teacher may actually want to give students an agenda to follow. For example:

- Discuss the problem and divide up tasks (10 minutes).
- Complete individual tasks (15 minutes).
- Reconvene to share individual work and synthesize information (15 minutes).
- Present solution to the rest of the class (5 minutes).

Depending on the nature of the task that students are asked to accomplish, the teacher may even wish to assign specific roles and responsibilities to individuals. And it's important that the teacher move about the room to keep an eye on student progress, and to answer questions as they arise.

COLLABORATIVE LESSONS

In addition to the preceding ideas on how to go about integrating collaboration into your teaching, this guide offers a number of engaging collaborative lessons, organized by grade level and subject area. All lessons meet the Common Core State Standards, include tips, and may be used with or without educational technology. Please also visit mimioconnect.com/collaborate to access many more free lessons and activities.



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Math | Grades K-2

Be on Time

Objective

To practice translating a written time to the face of a clock.

Description

In a whole-group setting, review concepts of time with students, including telling time to the hour and half hour. On the IWB or a flip chart, write down the following: 3:00, 12:30, 2:30, 1:00, 10:30, 5:00, 8:30, 4:30, 9:00. Also draw clock faces showing those times; make the little hand red and the big hand black. Next, divide students into pairs, with each pair using a mobile device with the MimioMobile application to take turns matching the times with the clocks. If your classroom does not have mobile devices, provide each student pair with a working clock, or create "working" clocks using poster board for the face and hands. Attach the hands with a cotter pin fastener so they will be moveable. Each student pair should take turns setting the clock hands to match the written times, monitoring one another's work. Be sure to circulate among the groups while the activity is underway, to monitor how well the students are doing.

Tip: If individual clocks for students are available, have students set times given orally.

You may want to give students an agenda to follow during their first few collaborative sessions. This will help them with timing, flow, and roles.

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Bear-y Fun Math

Objective

To practice completing math sentences using only supplied numbers.

Description

For this lesson, you will need to create the math sentences below on your IWB or on your flip chart. You will also need to create a set of numbers, 0-9. Divide students into teams, with each team using a mobile device with the MimioMobile app, or paper and a set of numbers. Students will complete the math sentences by inserting the correct answers from their set of numbers. Each digit may only be used one time. Offer manipulatives or counters to teams as needed in order to solve each problem. Review the correct answers with the whole class.

Content

- 1 bear + $_$ bears = 7 bears
- $_$ bears + $_$ bears = 10 bears
- 6 bears + $_$ bears = $_$ bears
- 4 bears + _ bears = _ bears
- $_$ bears + 3 bears = 7 bears
- 4 bears + 6 bears = _ _bears

Tip: Depending on the skill level and age of the students, have some team members go to the flip chart (or use a mobile device in conjunction with an IWB and MimioStudio Collaborate) to illustrate a math problem with a missing addend or sum. Have other team members solve the problem.

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Math | Grades 3-5

Fractions, Percents & Decimals

Objective

To recognize the relationships between fractions, percents, and decimals.

Description

Begin by reviewing the relationships between fractions, percents, and decimals. Then, write out (in words) a series of fractions on an IWB or a flip chart, and have students divide into groups. Each group should have a mobile device with the MimioMobile app, or paper for recording their answers. For each fraction written out on the IWB or flip chart, the groups should supply the corresponding fraction, percent, and decimal. Compare completed pages as a whole class, and ask groups to explain their choices.

Sample Content

Written fractions:

One tenth

One half

One third

One fourth

Three fourths

Answers:

1/10, 10%, 0.01

1⁄2, 50%, 0.5

1/3, 33%, 0.3

1⁄4, 25%, 0.25

34,75%,0.75

Tip: Encourage students to discuss their answer choices within their group as they work through the activity.

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Batter Up Math Facts

Objective

To practice multiplication facts.

Description

On an IWB or a flip chart, write 8-10 multiplication problems. Below the problems, enter a list of scrambled answers. Divide students into pairs, with each pair using a mobile device with the MimioMobile app, or paper. Students must solve each problem by choosing the correct answer from the list. Review correct answers with the entire class.

Sample Content

Problems:

3 x 6	4 x 4
7 x 2	6 x 8
9 x 5	7 x 6
8 x 7	3 x 5
Scramb	oled answers:
Scramb	bled answers: 56
15	56

Tip: If available, give each student pair a stopwatch or timer, and two mobile devices with the MimioMobile app, or pieces of paper. Allow students to race against their partners to complete the problems quickly and accurately.

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Math | Grades 3-5 (cont.)

Count Your Change

Objective

To practice making change from a dollar.

Description

Given an object to purchase, students will show the change they would get back from \$1.00. On an IWB or flip chart, draw four objects and put a price tag on each. You will also need to create change –quarters, dimes, nickels, and pennies – on the IWB, or provide pictures of coins. Divide students into four groups and assign one of the four objects to each group. If each group has a mobile device with the MimioMobile app, they can use their devices in conjunction with the IWB and MimioStudio Collaborate to show how much change they would get from a dollar. Otherwise, give each group a set of coins from which to make change, and ask them to present their result to the rest of the class. Review the correct answers with the whole class.

Sample Content

Objects:

Jelly beans – \$.36 Soccer ball – \$.89 Block – \$.44 Beach ball – \$.78

Change needed:

2 quarters

2 dimes

1 nickel

4 pennies

Tip: To give students more practice, continue the exercise by rotating the objects among the groups.

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MATH | GRADES 6-12

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Math | Grades 6-12

A Matter of Degrees

Objective

To practice measuring the degree of various angles and naming the correct angle type.

Description

Review acute, right, and obtuse angles with the class. On an IWB or flip chart, create drawings of at least four different angles. Divide the class into four groups and assign one angle drawing to each group. If each group has a mobile device with the MimioMobile app, they can use their devices in conjunction with the IWB and MimioStudio Collaborate to practice measuring the degree of various angles and name each type of angle. If mobile devices are not available, give each group a protractor and have them work to determine the measurement in the drawing; one member from each group should then go to the flip chart and write their answers below the drawing they have been assigned. Discuss the findings with the whole class.

Sample Content

- 32° acute angle
- 111° obtuse angle
- 90° right angle
- 78° acute angle

Tip: Have students divide into groups. Ask students to write the definition of acute, right, and obtuse angles and draw an example for each. Teachers can choose to share different groups' work with the class and check for understanding.

Some of the key elements to stress with students when collaborating are:

- Listen to others
- Establish common goals
- Compromise

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Math | Grades 6-12 (cont.)

Function Fun

Objective

To practice identifying types of graphs according to function.

Description

Review linear, exponential, and quadratic functions with the class. Using an IWB with MimioStudio software, drag in half a dozen sheets of graph paper from the Gallery (found in "Templates") and draw one type of function on each of them. Alternately, you could display actual graphs on a document camera, or draw enlarged graphs on a flip chart. Have students divide into groups, with each group using a mobile device with the MimioMobile app. After deciding which type of function is depicted in each graph, the group can use MimioStudio Collaborate to share their answers with the class. Alternately, one member from each group can present the group's findings verbally. Review the correct answers with the whole class.

Tip: Ask one member of each group to verbally define one of the types of functions and then draw the function on a graph. The student can use the pen tool with the IWB, or a marker pen on a flip chart.

Teachers can also add a new page and drag in graph paper from the MimioStudio Gallery. Push the new page out to the mobile devices and assign a function to each group. Students can use the pen tool to draw the function on the graph paper. Pull each group's completed page forward to share with the class, and have each group explain their graphed function.

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Sum of All Angles

Objective

To practice classifying polygons according to the sum of internal angles.

Description

On an IWB, create four columns, labeling them as follows: 180 degrees, 360 degrees, 540 degrees, and 720 degrees. In each column, create one example of the appropriate polygon. You will also need to create multiple examples of each type of polygon, plus a few additional ones (e.g., heptagon, octagon). These can be positioned at the bottom of the page on the IWB. If your classroom is not interactive, you can make duplicate copies to hand out. Divide the class into groups, and tell them they must work with each other to determine in which column each polygon falls. Groups using a mobile device can drag selected polygons into the appropriate column and share their result in conjunction with the IWB and MimioStudio Collaborate. Otherwise, each group can present its findings verbally to the class. Review the correct answers with the whole class, pointing out which polygons do not belong to any of the columns.

Sample Content

180 degrees - 3-sided polygon such as right triangle, equilateral triangle, isosceles triangle

360 degrees - 4-sided polygon such as rectangle, square, trapezoid

540 degrees - 5-sided polygon (pentagon)

720 degrees - 6-sided polygon (hexagon)

Tip: As a whole class, review how to find the sum of internal angles in a given shape.



Language Arts | Grades K-2

Compound Match-Up

Objective

To practice recognizing/building compound words.

Description

Group students into pairs. Have students work with their partner to complete the activity. On an interactive whiteboard, slips of paper, mobile device using the MimioMobile app, or a flip chart, students should write down words that can be combined to form compound words, and then make a list of their compound words. Have individual students from the pairs use their mobile devices or the whiteboard in front of the classroom to show or write down their answers. Ask for definitions of the compound words from the whole classroom.

Sample Content

Words to build from:	Compound words:
Shoe	Sailboat
Chalk	Shoelace
Water	Watermelon
Board	Chalkboard
Boat	
Sail	
Melon	
Lace	

Tip: Provide images of the various compound words so that students not only create the words but also match them to the corresponding image.

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Vowel Sounds Sort

Objective

To practice distinguishing between short and long vowel sounds.

Description

Write a scrambled list of words on the interactive whiteboard or on a flip chart. Divide students into groups and tell them to assign one group member as the recorder. Working together, students should say each word aloud and decide whether the vowel sound is short or long. The recorder should list each short vowel word in one list and each long vowel word in another, using the order a, e, i, o u. When the groups have finished sorting the words, the recorders can take turns presenting their results to the whole class using mobile devices in conjunction with an IWB, or flip chart. Review discrepancies between answers with students.

Sample Content

Long vowels:	Short vowels:
Spade	Bat
Cheese	Red
Bike	Fin
Stone	Рор
Cube	Cup

Tip: Assign each group a vowel, and ask them to make lists or draw pictures of short and long vowel words using their assigned vowel. View student work using a document camera, via a collaborative mobile device, or display it on the classroom walls.

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Language Arts | Grades 3-5

Beach Alphabetical Order

Objective

To practice putting words into alphabetical order.

Description

Write a scrambled list of words on an IWB or flip chart. Divide students into triads and have them copy the words onto a mobile device using the MimioMobile app or strips of paper. Each triad should then sort the words into the correct alphabetical order and display their work to the class. Triads with a mobile device can use the IWB with MimioStudio Collaborate; strips of paper can be pasted down onto a full sheet of paper or piece of cardboard. When all the work is displayed, ask students to check their group's answers against the others. Ask a member of each group to explain why their answers are correct. Discuss which answers are actually correct. Have students in each group fix any incorrect answers.

Sample Content
Play
Bucket
Shovel
Towel
Beach
Castle
Summer
Shell
Swim
Sun
Sand
Sea

Tip: Have the triads discuss how to alphabetize words that start with the same first letter. Ask one student from each group to report back to the class.





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Sentence Savvy

Objective

To practice distinguishing between the four types of sentences.

Description

Begin by reviewing the four different types of sentences with the whole class: imperative, interrogative, declarative, and exclamatory. Then display all four types of sentences on an IWB using MimioStudio Collaborate or a flip chart, leaving the final punctuation off. Divide the class into teams of four and have each team appoint a recorder. After reading each sentence, the teams will decide what type it is and what the terminal punctuation should be, while the recorder takes notes on a mobile device or piece of paper. Next, ask two teams to join together and take turns sharing their sentence designations. Have students help each other determine if their sentence choices are correct and make changes as needed. Review the submitted answers with the whole class and correct any misconceptions.

Sample Content

Interrogative:

What is on the lunch menu today

Declarative:

Kirk is driving to the store to get milk and bread

Exclamatory:

Our class won first prize for the pizza party

Imperative:

Please hand in your homework right now

Tip: Group students into teams of four. Have each group brainstorm one declarative sentence, one imperative sentence, one exclamatory sentence, and one interrogative sentence. A recorder in each group should write down the sentences and their designations, using a mobile device with the MimioMobile app or a piece of paper. The teams can then take turns presenting their brainstormed sentences to the whole class with MimioStudio Collaborate. Discuss any incorrect sentences.

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Language Arts | Grades 6-12

Author's Purpose

Objective

To practice using a Venn diagram to make connections between types of media and the purpose of the author.

Description

In a whole-group setting, review the types of authors' purposes: Inform or Explain, Entertain, and Persuade. Have students consider and discuss what forms of writing and media types might serve each of these purposes best. On an IWB using MimioStudio or a flip chart, list types of media and/or different writing styles, and draw a Venn diagram labeled with the three author's purposes. Have the students divide into groups, and ask each group to choose a recorder. Tell the students that they must decide which circle(s) of the Venn diagram should contain each entry on the list. The recorder should keep track of the group's choices on a mobile device using the MimioMobile app or a piece of paper. The recorders can take turns presenting their results to the whole class using mobile devices in conjunction with an IWB or a document camera, or simply displaying their diagrams. Review discrepancies between answers with students.

Sample Content

Inform or Explain:	Entertain:	Persuade:
Newspaper	Fiction	Newspaper
Magazines	Make you laugh	Magazines
Encyclopedias	Magazines	Try to convince you
Factual information	Comics	Commercials
Nonfiction	Poetry	Nonfiction
Autobiography		Billboard signs
Graphs and Charts		Junk mail

Tip: Have students divide into groups to make a list of authors' purposes that the class reviewed previously and brainstorm a form of media where each could be found. Have groups share with the class as a whole.



LANGUAGE ARTS | GRADES 6-12

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Identifying Parts of Speech

Objective

To practice identifying nouns, verbs, adjectives, and adverbs in sentences.

Description

Review parts of speech with the whole class. On an IWB or flip chart, write a series of sentences and underline a word in each that represents one of the four parts of speech. Have students divide into groups, each of which has a recorder with a mobile device or piece of paper. Each group should then work together to identify which part of speech the underlined words represent. As a whole group, review answers using mobile devices in conjunction with an IWB or a document camera, or simply have the recorders read their group's answers aloud. Correct any misconceptions.

Sample Content

She wore a new <u>red</u> dress to the party. We <u>spend</u> the summer months at the beach. I left my backpack in the car this <u>morning</u>. When it <u>rains</u>, I like to go to the movies. He sat by the window and watched the <u>rain</u>.

I could <u>hardly</u> hear them speaking.

Tip: Have each group create a sentence and underline one word in their sentence. Take turns sharing each group's sentence by maximizing it on the class IWB using MimioStudio Collaborate or a flip chart, and have students in other groups share which part of speech is underlined.

> Sometimes collaboration goes more smoothly when you assign each student a set role or responsibility.



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Science | Grades K-2

Plant Parts We Eat

Objective

To recognize the relationship between plant parts and foods we eat.

Description

On an IWB or flip chart, create six boxes and label them as follows: Roots, Fruits, Stems, Flowers, Seeds, and Leaves. Leave enough room under the boxes for a scrambled list of plant parts we eat (see Sample Content, below). Divide students into six groups and assign each group a different plant part. Each group should have a mobile device with the MimioMobile app, or paper and pencil. Have students work together in their groups to choose the appropriate foods from the scrambled list for their box. Using the MimioStudio Collaborate feature, the whole class can view the results. Alternately, one student from each group can present the group's findings. Teachers can compare groups' work to check for understanding.

Sample Content

Roots:	Flowers:
Potato	Broccoli
Carrot	Cauliflower
Fruits:	Seeds:
Apple	Corn
Apricot	Beans
Cherry	
	Leaves:
Stems:	Lettuce
Celery	Cabbage
Asparagus	

Tip: Ask the groups to draw one or more examples that were not included in the sort activity. Teachers can share groups' work with the class.

Visit **mimioconnect.com/collaborate** to download samples of these collaborative lessons.

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Frog Life Cycle

Objective

To check students' understanding of the frog life cycle and then review the correct order.

Description

Have students divide into groups and discuss within their group the steps of a frog life cycle. Using a mobile device with the MimioMobile app or paper and pencil, each group should number and name each step. Ask one student from each group to go to the flip chart or use a mobile device in conjunction with an IWB and MimioStudio Collaborate to present the group's conclusions. Discuss the correct sequence as a whole class, and correct any misconceptions.

Sample Content

- 1. Eggs
- 2. Tadpole
- 3. Tadpole with legs
- 4. Froglet
- 5. Frog

Tip: Encourage students to discuss why their initial ideas were similar to or different from the correct frog life cycle.

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Science | Grades K-2 (cont.)

Animal Classification

Objective

To practice classifying different animals into one of three categories: amphibians, fish, and reptiles.

Description

Define amphibians, fish, and reptiles for the class. On an IWB or as a handout, create three boxes labeled as follows: Amphibians, Fish, and Reptiles. Place images of various types of amphibians, fish, and reptiles below the boxes. Have students divide into groups, with each group using a mobile device with the MimioMobile app, or a copy of the handout. Students in each group should work together to perform animal classification, either by dragging the pictures to their correct box or by marking each animal A, F, or R. Compare each group's results by using the MimioStudio Collaborate feature, or by displaying the completed handouts. As a whole group, discuss each animal's characteristics.

Sample Content

Amphibians:	Fish:	Reptiles:
Frog	Trout	Snake
Toad	Eel	Lizard
Salamander	Shark	Turtle

Tip: Have the groups write a sentence or a list to explain the similarities within each grouping.

Collaboration can be difficult for children and adults. Always give constructive feedback so they know if they are doing well and what they might do to improve.

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SCIENCE | GRADES 3-5

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Science | Grades 3-5

Matter Vocabulary

Objective

To check students' grasp of matter vocabulary.

Description

On the IWB or flip chart, list the definitions for six words related to matter. Leave space near each definition for the word it defines. Have students divide into groups, with each group using a mobile device with the MimioMobile app, or paper and pencil. Tell students they should agree on one word for each definition, and record it. With the whole class, compare the groups' answers.

Sample Content

- 1. Anything that has mass and takes up space. (Matter)
- 2. Matter is made up of these. (Elements)
- 3. Characteristics of matter. (Properties)
- 4. Measurement of how much space something takes up. (Volume)
- 5. Measurement of the pull of gravity on an object (Weight)
- 6. A system of measurement. (Metric system)

Tip: As a whole class, review and discuss matter vocabulary.

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Science | Grades 3-5 (cont.)

Sorting States of Matter

Objective

To check students' understanding of the properties of matter.

Description

As a whole class, review the terms solid, liquid, and gas. On the IWB or flip chart, create three boxes labeled as follows: Solid, Liquid, and Gas. Place labeled pictures of examples of the three properties below the boxes. Divide students into groups, with each group using a mobile device with the MimioMobile app, or paper and pencil. Tell the students that they should work together in their groups to sort the images into the correct category. With the whole class, compare the groups' answers.

Sample Content

Solid:
Pants
Hamburger
Liquid:
Liquid: Glass of milk
•

Gas:

Balloon

Oxygen tank

Tip: Have each group draw an additional example for each type of matter.

SCIENCE | GRADES 6-12

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Science | Grades 6-12

Type of Matter

Objective

To check students' understanding of the types of matter.

Description

Review with the class the characteristics of each type of matter: element, compound, homogeneous mixture, and heterogeneous mixture. On the IWB or flip chart, create a list of substances. Divide students into groups, with each group using a mobile device with the MimioMobile app, or paper and pencil. Tell the students they should work in their group to determine which type of matter each substance is, and record their answers. With the whole class, compare the groups' answers and correct any misconceptions.

Sample Content

Muddy water (heterogeneous mixture) Brass (homogeneous mixture) Baking soda (compound) Fog (heterogeneous mixture) Vinegar (homogeneous mixture)

Tip: Have each group come up with additional substances for each type of matter.

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Science | Grades 6-12 (cont.)

Measurement Precision

Objective

To practice making precise measurements, given a random set of numbers and two different scales.

Description

Review the concepts of measurement precision with the class. On the IWB or as a handout, create two scales with the sections marked as follows:

- 0.3, 0.4, 0.5, 0.6, 0.7, 0.8
- 0.05, 0.06, 0.07, 0.08, 0.09, 0.1, 0.11

Each section should be divided into tenths. In a separate list, provide a scrambled list of measurements (see Sample Content, below). Divide the students into groups, with each group using a mobile device with the MimioMobile app, or a handout and pencil. Tell students they must work in their groups to determine which scale each measurement belongs to, and where on the scale it should fall. With the whole class, compare the groups' answers.

Sample Content

.573
.0825
.800
.700
.0927
.630
.1025

Tip: Have each group come up with a measurement challenge for the other groups.



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Adjust the Force, Observe the Acceleration

Objective

To hypothesize and then test whether increasing the force on a ball increases its acceleration.

Description

Divide students into groups and ask them to find agreement in their groups about whether adjusting the force on a ball will change its acceleration (how quickly it speeds up). Using a mobile device with the MimioMobile app, or pen and paper, each group should write down their prediction and explain the reasoning behind it. To test the hypotheses, you will need a baseball, masking tape, a tape measure, and a stop watch. Using the masking tape, mark off a baseline and a finish line, with the track three meters long. Then have each group take three turns rolling the ball, increasing the force each time. While one student rolls the ball, another should use the stopwatch to time how long the ball takes to cross the finish line (meters per second). With the whole class, compare the groups' answers.

Tip: Have each group present their hypothesis and reasoning to the whole class. Correct any misconceptions.



Social Studies | Grades K-2

Martin Luther King, Jr. - Fact or Opinion?

Objective

To practice recognizing the difference between a fact and an opinion.

Description

Review the terms 'fact' and 'opinion' with the whole class. On an IWB or flip chart, write down a list of statements about Martin Luther King, Jr. Some should be facts and others opinions. Divide the class into groups, with each group using a mobile device with the MimioMobile app, or pen and paper. Tell the groups to read each statement, decide among themselves whether it is a fact or an opinion, and mark down "F" or "O" for each one. Using the MimioStudio Collaborate feature, the whole class can view the results. Alternately, one student from each group can present the group's findings. Teachers can compare groups' work to check for understanding.

Sample Content

Martin Luther King, Jr. was born in Atlanta, Georgia on January 15, 1929. (F)

MLK, Jr. was a good man because he cared about others. (O)

As a child, Martin was treated poorly on several occasions and wanted fair treatment for everyone. (F)

As an adult, Dr. King became a minister at a church in Montgomery, Alabama. (F)

MLK, Jr. deserved to go to jail 30 different times because of his actions. (O)

Tip: Have each group write or draw one fact and one opinion on any topic. Teachers can share groups' work with the class as desired. Check for understanding of fact/opinion concept.

Who's on That Coin?

Objective

To become familiar with images of former U.S. Presidents and learn on which coins they appear.

Description

On an IWB or handout, create scrambled names and images of former U.S. Presidents and images of the coins on which these Presidents appear. Divide the class into groups; each group should have a mobile device with the MimioMobile app, or a copy of your handout. Students should work together in their groups to match the names to the images of the Presidents and the coins on which the images appear. Using the MimioStudio Collaborate feature, the whole class can view the results. Alternately, one student from each group can present the group's findings. Teachers can compare groups' work to check for understanding.

Sample Content

George Washington – quarter John F. Kennedy – half dollar Franklin D. Roosevelt – dime Thomas Jefferson – nickel Abraham Lincoln – penny

Performing assessment during an exercise will help you determine each group's progress.

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Social Studies | Grades 3-5

Who Can Vote?

Objective

To check students' understanding of who is eligible to vote in the U.S.

Description

On the IWB or on as a handout, create a scrambled list of characteristics of voters and non-voters of the United States (see Sample Content, below). Divide students into groups; each group should have a mobile device with the MimioMobile app, or a copy of your handout. Tell the students they should work together in their groups to sort the characteristics into voters and non-voters. Using the MimioStudio Collaborate feature, the whole class can view the results. Alternately, one student from each group can present the group's findings. Teachers can compare groups' work to check for understanding.

Sample Content

Eligible:Not eligible:Registered votersThose who are not living in their stateThose who are residents of their statesSomeone who has not registeredCitizens of the U.S.Citizens of other countriesMen and womenOnly menPeople 18 years and older8-year-olds

Tip: Before beginning this exercise, have students write a list of requirements they think are needed for people to vote. Discuss/ compare initial lists with the results of the activity.





Take the States Home

Objective

To learn to recognize the 50 states by their physical shape, and position them correctly on a map of the U.S.

Description

On an IWB or as handouts, create a map of the U.S. with the 50 states named. Hidden below a box on the IWB screen, put the shape of every state – you may vary the colors of the shapes, but do not name them. Teachers using handouts will need to put the shapes on a separate page, well scrambled, and have students cut out the shapes before beginning the exercise. Have students divide into groups; each group should have a mobile device with the MimioMobile app, or a set of handouts. Have students work together in the groups to complete the activity.

Tip: Teachers can have a friendly competition if desired, by setting a timer and having groups race against one another to complete the activity.

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Social Studies | Grades 3-5 (cont.)

Who's on That Coin?

Objective

To become familiar with images of former U.S. Presidents and learn on which coins they appear.

Description

On an IWB or handout, create scrambled names and images of former U.S. Presidents and images of the coins on which these Presidents appear. Divide the class into groups; each group should have a mobile device with the MimioMobile app, or a copy of your handout. Students should work together in their groups to match the names to the images of the Presidents and the coins on which the images appear. Using the MimioStudio Collaborate feature, the whole class can view the results. Alternately, one student from each group can present the group's findings. Teachers can compare groups' work to check for understanding.

Sample Content

George Washington – quarter John F. Kennedy – half dollar Franklin D. Roosevelt – dime Thomas Jefferson – nickel Abraham Lincoln – penny

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Social Studies | Grades 6-12

Analyzing Primary Sources

Objective

To analyze the content of a Supreme Court decision, Brown v. Board of Education, and draw conclusions about its effect on the public school system.

Description

On the IWB or on a flip chart, write out the excerpt (shown below, under Sample Content) from the Supreme Court decision of Brown v. Board of Education. Below the excerpt, put this question: "What was the effect of Brown v. Board of Education on the public school system?" Before dividing the students into groups, have one student read the excerpt aloud for the class. Have students divide into groups, with each group using a mobile device with the MimioMobile app, or paper and pencil. Each group should discuss the primary source as it relates to the question at the bottom of the page, reach a consensus, and record their answer. Using the MimioStudio Collaborate feature, the whole class can view each group's answer. Alternately, one student from each group can present the group's findings.

Sample Content

Brown v. Board of Education, Topeka 1954

Chief Justice Warren delivered the opinion of the court.

"We conclude that in the field of public education the doctrine of 'separate but equal' has no place. Separate educational facilities are inherently unequal. Therefore, we hold that the plaintiffs and others similarly situated for whom the actions have been brought are, by reason of the segregation complained of, deprived of the equal protection of the laws guaranteed by the Fourteenth Amendment. This disposition makes unnecessary any discussion whether such segregation also violates the due process clause of the Fourteenth Amendment."

What was the effect of Brown v. Board of Education on the public school system?

Tip: After all groups have presented their findings, facilitate a discussion/debate between groups on the topic.

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Social Studies | Grades 6-12 (cont.)

Three Branches of the Government

Objective

To check students' understanding of the three branches of the U.S. Government.

Description

On an IWB or on a handout, create three columns, one for each branch of the U.S. government: The U.S. Capitol, The White House, and The Supreme Court. See the Sample Content below for the contents of each column. Fill in "The U.S. Capitol," "Executive," and "House of Representatives" in the appropriate spots, but leave blank lines where the rest of the information should go. Have students divide into groups; each group should have a mobile device with the MimioMobile app, or a copy of the handout. Students should work together in their groups to fill in the blanks. Using the MimioStudio Collaborate feature, the whole class can view each group's answers. Alternately, one student from each group can present the group's findings. Teachers can compare groups' work to check for understanding.

Sample Content

Column 2:

The White House

The U.S. Capitol

Legislative

Column 1:

Congress

Executive

President

Column 3:

The Supreme Court Judicial Supreme Court

House of Representatives/Senate

Tip: Before beginning the activity, ask students to write everything they know about the branches of government. Post-activity, discuss initial thoughts and compare them to what was learned.





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Collaborate to the Core

Now that collaboration is an essential component of today's learning environment, many schools are increasingly turning to educational technology. Educational technology can facilitate student collaboration by empowering students to work easily together in developing critical thinking skills and building their knowledge across all curricular areas. These skills are essential for students' future success and align to the new CCSS. Whether it's two students working together or many more, they help each other learn more effectively through collaboration.

Imagine just a few ways in which technology in your classrooms can help you to get your students collaborating:

- Use mobile devices in small groups to get students to work together on specific projects, and then share the results with the whole group via an interactive whiteboard.
- Use mobile devices to take real-time polls of individuals and groups to drive discussion and debate.
- Employ document cameras to share physical work.
- Give one or more students the opportunity to lead the class in discussion or on a project.

Classroom technology engages students in ways that "old school" methods cannot, and teachers confirm that once the technology is introduced to their classroom, there's no turning back. When collaboration is the goal, the benefits of educational technology are irrefutable.



Download samples of these collaborative lessons at **mimioconnect.com/collaborate.**

REFERENCES

Quinn, Timothy. "G-R-O-U-P-W-O-R-K Doesn't Spell Collaboration." Phi Delta Kappan, Vol. 94, No. 4, December 2012/January 2013: 46-48.

Riddile, Mel. "Five Essential School-wide Conditions for Common-Core Achievement." LearningFirstAlliance.org, January 10, 2013.

TeachThought.com staff. "20 Collaborative Learning Tips and Strategies for Teachers." http://www.teachthought.com/learning/20-collaborative-learning-tips-and-strategies.



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