

their brain stronger just by
e items in the collection!
ifferent ways that we can
he collection). Tell them,
e try hard, our brain can
ffort and ask students to
y put forth effort.

Terminology

preliminary lessons to
ins work, you're ready to
akes a growth mindset.
ieve that with effort and
ter, then we will have a
h Mindset Poster found

n mindset means, intro-
t. Tell students,

e that they can
ple have a fixed
ving, "I am not
ports," that is a
is sometimes
d to always try
ain stronger in

ings people with a fixed
(above) is very helpful for
had a fixed mindset
students to think about
own lives and in the
TV shows they enjoy.

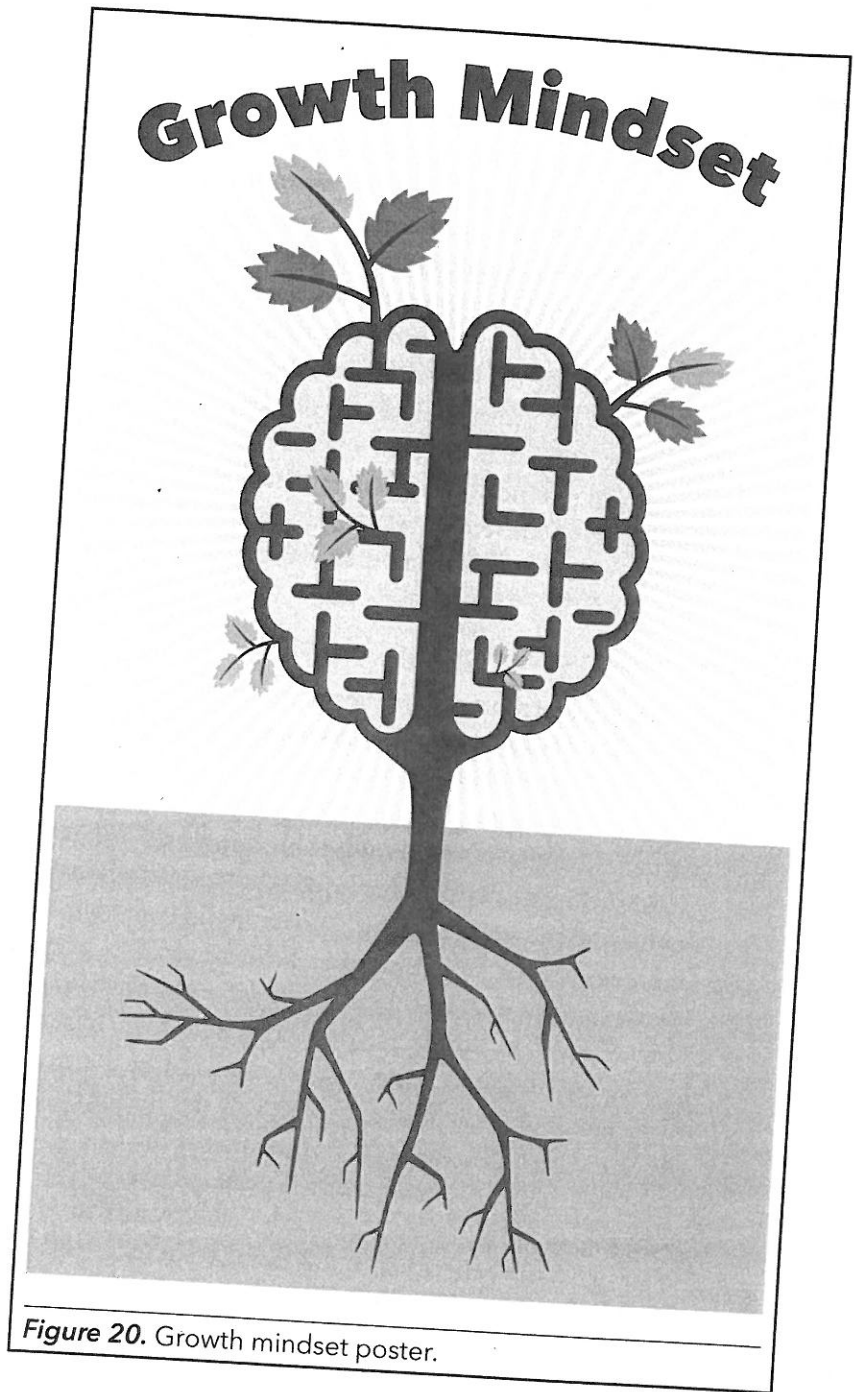


Figure 20. Growth mindset poster.

Mindsets in the Classroom

Next, share with the students that they want to always strive to have a growth mindset. Tell them:

Sometimes we feel like we can't learn something new like a new video game or how to work a new cell phone or how to speak another language, but then we can remind ourselves to have a growth mindset and realize that if we stay motivated, practice, and try very hard we can learn to do almost anything! In our classroom, we will be working toward having a growth mindset classroom every day. Sometimes I may point to our growth mindset poster to remind you to persevere. Each one of us will always persevere, never give up, and remind ourselves that we need to embrace challenges.

Teaching Perseverance Through Literature

A very effective way to teach perseverance is through literature. Identify and discuss books that demonstrates perseverance, persistence, and effort:

- *The Little Engine That Could* by Watty Piper—After a class discussion about the book, pose this question, “What if the Little Engine decided that he couldn't instead of could, how would the story change?” “What would happen if he said ‘I don't think I can’ instead of ‘I think I can’?”
- *Wilma Unlimited: How Wilma Rudolph Became the World's Fastest Woman* by Kathleen Krull—This is the story of runner Wilma Rudolph. Focus first on the word in the title, “Unlimited.” Ask students to predict why the author chose the title. Then, after the book is read, discuss the title once more focusing on Wilma Rudolph's perseverance.
- *Amazing Grace* by Mary Hoffman—Grace wants to play Peter Pan in the school play but is facing resistance; discuss what Grace does to persevere.

Help Students Adopt a Growth Mindset

- *Gifted Hands: The Ben Carson Story* (Kids edition) by Gregg Lewis and Deborah Shaw Lewis—The real-life story of a boy who went from “class dummy” to brilliant pediatric neurosurgeon. Discuss how Ben Carson persevered to achieve his goals.

Games That Build Perseverance

Through the Critical Thinking Growth Mindset project discussed in Chapter 4, it was discovered that when students engage in reasoning games that grow more complex as they play, they build perseverance for learning tasks. Games made by Thinkfun that progressively grow more challenging, thus building perseverance, include ShapeOmetry, Chocolate Fix, Brick by Brick, Shape by Shape, Rush Hour, Swish and Swish Jr., and Block by Block. It is amazing to witness students who typically give up, persevere and try to get to the next level of challenge. These can be easily justified for classroom use for several reasons. The first is that perseverance is one of the Common Core State Standards for Mathematical Practice: “Make sense of problems and persevere in solving them.” Another justification is that these games also build reasoning processes. They can be used as centers or anchor activities and always be available before and after school, as well as during indoor recess time for elementary students.

Facing Failure

One of the areas where students struggle is with the idea of failure. This can be particularly hard for gifted students, perfectionists, and those students who live with strong parental pressure to succeed. Whenever possible, take opportunities to discuss the value of failure.

Asking students to analyze a scenario, quote, or movie clip can be an effective way to engage students in a discussion about the value of failure. For older students, analysis and interpretation of a quote such as Maya Angelou’s “You may encounter many defeats, but you

Mindsets in the Classroom

must not be defeated. In fact, it may be necessary to encounter the defeats, so you can know who you are, what you can rise from, how you can still come out of it.” can serve as a vehicle to begin a critical discussion or debate about the value of failure.

Younger students can be shown a film clip and become engaged in discussion. As mentioned earlier, there is a scene in Disney’s *Meet the Robinsons* movie where Lewis creates an invention that combines peanut butter and jelly and it fails. (Search “Meet the Robinsons Failure Scene” on YouTube.) It is effective to stop the video clip right after Lewis buries his face in his hands and apologizes for the failure of his invention. Students can then be asked some of the following questions:

- How does the boy react to the way his invention worked?
- Why do you think he reacts this way?
- What do you think he will do next?
- If you were the boy, how would you react?
- How do you think the adults in the room will react to this situation? Why?

Continue to show the rest of the clip where the adults happily yell, “You’ve failed! From failure, you learn, from success . . . not so much.” Continue engaging the students in discussion:

- Why did the adults react this way?
- What does it mean when they say “From failure, you learn, from success . . . not so much.”? Do you agree with this statement? Why or why not?
- Think of a time when you have failed at something. It might be schoolwork, learning to play a musical instrument, making a clay pot, ice skating . . . anything. (Give students an opportunity to think.) Now think about how you reacted to that failure. Did you give up? Try again in a different way? Try again the same way? Get angry? Cry? Celebrate?
- Let’s brainstorm some ways that we can react in a positive way to failure. What are some things we can reflect on or ask ourselves when we do not succeed?

Help Students Adopt a Growth Mindset

After this class discussion, continue to revisit the reflective aspect of reacting to failure throughout the year. This theme can be incorporated in writing assignments, debates, or analysis of characters, historical figures, and scientists who have failed. This learning experience can really make an impact with some students, who gain encouragement from seeing how effort and hard work can eventually pay off. In addition to discussion about the famous failures listed below, ask students to assume the point of view of the person involved in the failure. Some students may be willing to role play. For example, give the students a scenario that is similar to the following: "You are a scientist whose job is to invent the strongest adhesive possible, but instead, you discover that you have developed a reusable adhesive. How would you react?"

Some examples of famous failures include:

- R. H. Macy: The founder of Macy's department store failed at seven previous business attempts.
- Colonel Sanders: Harland Davis Sanders' famous chicken was rejected 1,009 times before a restaurant accepted it.
- Thomas Edison: He conducted experiments on his concepts 9,000 times before he created the lightbulb.
- Post-it® Notes: A scientist at 3M Company was working to create a super-strong adhesive; it was a failure. Instead, he accidentally made a reusable, pressure sensitive adhesive that later was utilized in sticky notes.
- Chocolate Chip Cookies: Ruth Wakefield, owner of the Toll House Inn, was trying to make her chocolate cookie recipe and discovered that she was out of baker's chocolate. She decided to take sweet chocolate and break it into little pieces, adding them to the cookie dough and thinking that they would melt while they were baked. Instead, the little pieces stayed together. She did not have her chocolate cookies in the end, but discovered the chocolate chip cookie through this failure!

Mindsets in the Classroom

Analyzing Authors and Characters Sample Learning Task

With your students, brainstorm a list of characters that they have gotten to know through their reading during the year (elementary and middle school level) or brainstorm authors that they have studied (middle and high school level). Record the names on cards and group students in pairs or triads. Each group will be given a card with the name of a character or an author. (This is a great time to do some very subtle differentiation by giving more complex character or author cards to students who embrace challenge.) Each group will analyze the character or author's actions/words/written word through a growth or fixed mindset lens. For example, some second-grade characters might include Grace, from *Amazing Grace*, and Alexander, from *Alexander and his Terrible, Horrible, No Good, Very Bad Day*.

An example of an author list for a 10th-grade English course might include Henry Thoreau, Ralph Waldo Emerson, Emily Dickinson, Frederick Douglass, F. Scott Fitzgerald, and Mark Twain. Teachers can write options for authors to study on index cards and hand them out. In pairs or triads, students should discuss what they know about each author and look for additional information as needed. Students will be asked to find evidence in the author's life or his writings that may suggest a fixed and/or growth mindset mentality. They must be prepared to justify their decision with specific evidence. For example a group of students might share:

We think that Frederick Douglass has a growth mindset for many reasons. A specific example of how he valued effort and persistence can be found on page 58 of *Narrative of the Life of Frederick Douglass* where he explains the process of how he learned to read and write in a very nontraditional manner by copying letters that were marked on timber as well as other innovative ways. He states, "Thus after a long, tedious effort for years, I finally

succeeded in learning how to write.” Other examples of a growth mindset in Frederick Douglas’ life include . . .

After each group states their argument, cards should be classified into three possible groups: Fixed Mindset, Growth Mindset, and Both Fixed and Growth Mindset. Students can then look at the categories and possibly begin to make some generalizations about authors, time periods, literary philosophies, and movements in relation to a growth or fixed mindset.

A similar task can incorporate video clips of real-life or movie characters into the classroom by using clips similar to those in Figure 21. Have students discuss what they see in the film clips and classify the characters’ reactions using a chart similar to the one created for the author studies.

Concept Placemats

The concept placement strategy was inspired by the concept formation model. It is similar to a collection, only it typically builds a more abstract concept and uses only one piece of paper or one projected slide or flipchart. A concept placemat can be developed easily using a computer and clip art, the more challenging part is deciding what images will be used to communicate the concept.

Concept formation relates to making connections, seeing relationships between items of information, and defining a concept from them. Concept formation is a key skill required for learning of new ideas. Is there a concept based on a content area that is being studied that you would like your students to form using images? Choosing a more abstract concept works best. For example, “relationships” works better than “pets.” Some other guidelines for developing concept placemats include:

- Once you choose a concept, brainstorm ideas about what kinds of images might represent that particular concept.
- If you develop the concept placemat with the computer, open a word document, and add images. Insert pictures

Title	Summary	Video Clip
Facing the Giants	After missing a field goal kick, David's father tells him that he won't make the kick unless he believes in himself.	http://www.wingclips.com/movie-clips/facing-the-giants/accept-defeat
The Ron Clark Story	After his class performs poorly on their tests just before the state exams are taken, Mr. Clark gives his students a lesson on believing in themselves.	http://www.youtube.com/watch?v=zHMMvD47EX8&noembed=1
The Rosa Parks Story	A girl in Rosa's class questions why they need to learn if all they will end up doing is serving White people.	http://www.wingclips.com/movie-clips/the-rosa-parks-story/no-one
Pursuit of Happiness	Interview of Chris Gardner. Watch for verbal and nonverbal evidence of fixed and growth mindset on both sides of the table.	http://www.youtube.com/watch?v=ggHXKtKATIE End the clip as soon as the interview is over.
Failure	30-second Nike Commercial	http://www.youtube.com/watch?v=45mMioJ5szc

Figure 21. Suggested mindset video clips.

using clip art or images found online. Three to six images are usually enough to build a concept.)

- In the middle of the concept placemat, place a text box that says, “Find pairs of objects that share a common concept. Find three objects that share a common concept. What concept do all of these images have in common? Be prepared to justify your thinking.”

Specific suggestions for concept placemats to create are included below.

Next, within an instructional sequence, determine how the placemat will be used: As a preassessment or formative assessment? Activator? As a vehicle for learning new information? As a springboard to a discussion? The possibilities are endless.

Ask students to look at the placemat quietly. Give everyone a set time (2–3 minutes) then ask for ideas (otherwise the “quick thinkers” dominate) using questions similar to these:

- Who can find two things that are the same in some way? (Take all student responses. During this time observe/listen for unique connections between the images.)
- Who can find three things that are the same in some way? (Take all student responses. During this time observe/listen for unique connections between the images.)
- Now, let’s look for some things that are the same among all of the images. (Take all student responses. During this time observe/listen for unique connections between the images.)
- Let’s hear some ideas for adding more things that also share the same concept.
- Let’s think about why I might have chosen this concept for our class. What do you think we will be talking about? What do you think we are going to learn about? (This question should ask about the content connection of the strategy).

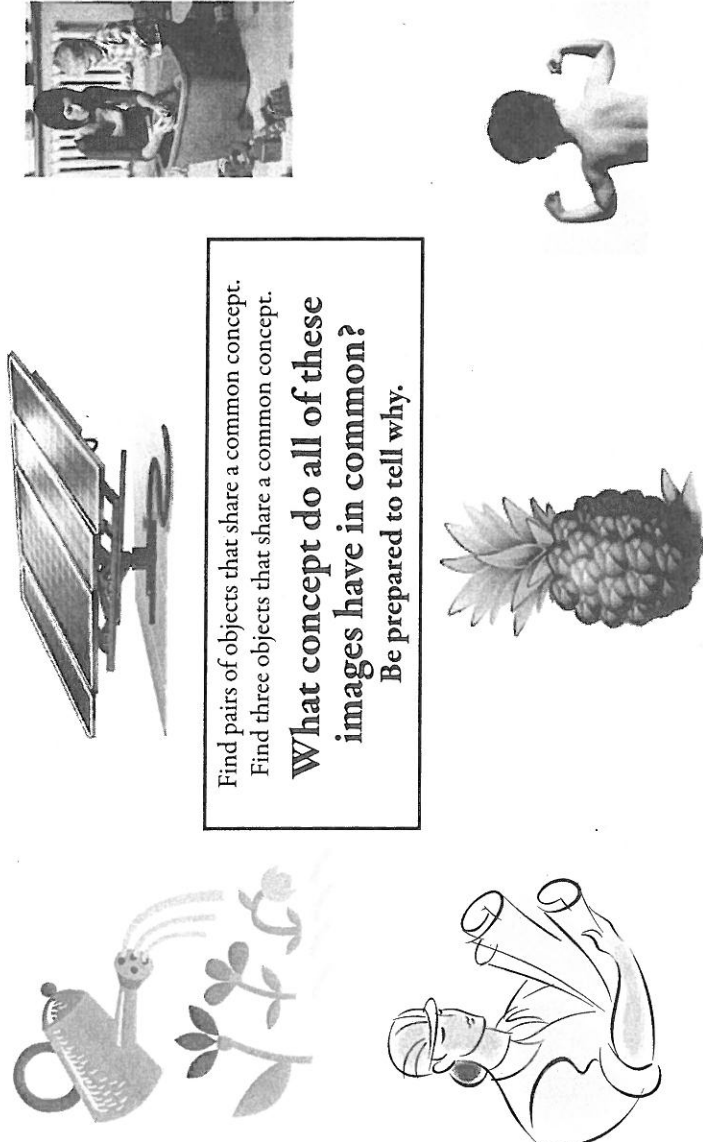
Mindsets in the Classroom

Concept placemats you may consider developing include the following:

- *Concept Placemat #1: Things That Have Potential.* Images can include: flowers being watered, a solar panel, blueprints for a building, a child with blocks, a young child flexing his muscles, and for older students, a pineapple. The pineapple demonstrates potential because it is often harvested before it is fully grown so that the size is consistent when it is cored, sliced, and fitted into its can. An additional discussion can occur about the potential the pineapple may have if it were allowed to continue growing. Would it be sweeter? Juicier? How large would it grow? Relate the concept placemat and discussion back to the students' own potential. (See Figure 22.)
- *Concept Placemat #2: Neural Networks: Study Habits That Help the Brain Learn.* Images can include: Two students working together (collaborative learning), a mnemonic device such as HOMES for the Great Lakes, a picture of various types of flashcards, a mathematical formula being repeated (repetition), and a child thinking about new learning and applying it to other things. After the discussion of the concept, students can use this to reflect on their own study habits and make plans for improving these habits. (See Figure 23.)
- *Concept Placemat #3: Attention and Concentration: Things That Help the Brain Focus.* Images can include: A plate with foods that represent a good breakfast, an image that represents no TV or electronics, a child sleeping, children playing a sport outside, a student using all of his or her senses: hearing, seeing, smelling, tasting, and touching. Discussion can focus on why these things can help the brain work to the best of its ability. Students can make a plan for improving their own brain function. (See Figure 24.)

Find pairs of objects that share a common concept.
Find three objects that share a common concept.

What concept do all of these images have in common?
Be prepared to tell why.



The image contains six distinct illustrations arranged around a central text box. At the top left is a television set on a stand. To its right is a photograph of a woman sitting at a desk, possibly studying or working. Below the television is a pineapple. To the right of the pineapple is a photograph of a muscular man flexing his biceps. At the bottom left is an illustration of a woman watering a plant with a watering can. To its right is an illustration of a woman wearing a hard hat and reading a large scroll.

Figure 22. Potential concept placemat.

Find pairs of objects that share a common concept.
 Find three objects that share a common concept.
What concept do all of these images have in common?
 Be prepared to tell why.

This will help Paul work his car problem...

I know I can use it here in math...


I bet Mom can use this in her computer science class, too!

Oh, I get it, I wonder how else I can use this?

H uron
 O ntario
 M ichigan
 E rie
 S uperior

6 $\frac{2}{3}$ 3 - $\frac{1}{3}$
 $5\frac{1}{6}$ $\frac{7}{19}$ B
 5 $\frac{4}{21}$ there
 x6 said

Figure 23. Neural networks concept placemat.



hearing

sight

smell

touch

taste

Find pairs of objects that share a common concept.
Find three objects that share a common concept.

What concept do all of these images have in common?
Be prepared to tell why.


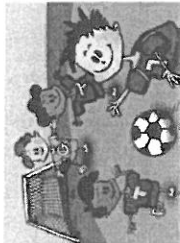




Figure 24. Attention and concentration concept placemat.