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INTRODUCTION

In 1988, a group of researchers, including Stanford psychology professor Carol Dweck, studied students' responses to failure.

Some students rebounded well, while others were derailed by simple setbacks.

After extensive research with thousands of students, Dr. Dweck came up with the terms *fixed mindset* and *growth mindset* to encapsulate the differences between how all of us think about learning.

Simply put, having a growth mindset means you believe that you can and will improve with effort. A fixed mindset, by comparison, means that you believe you have a fixed amount of intelligence or talent that will never change.

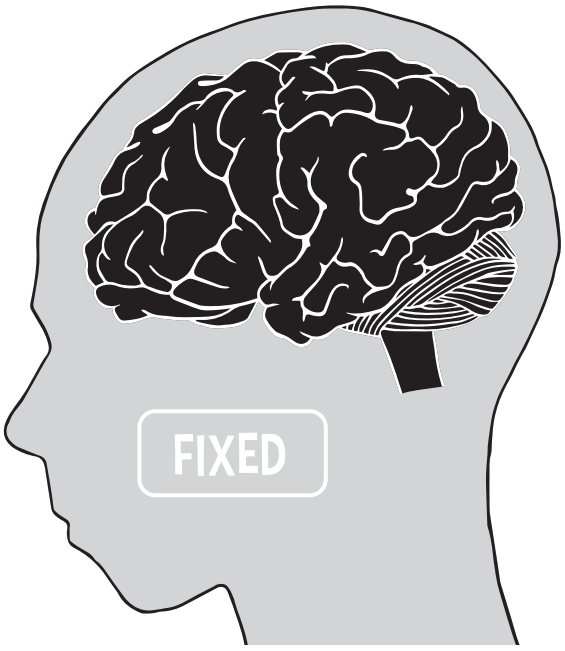
We all have these two mindsets, but what Dr. Dweck has shown is that students are more likely to succeed once they take on a growth mindset and understand that they can get better at anything with time and effort.

In a fixed mindset, challenges are avoided, criticism is ignored, and students feel threatened by the success of others and are quick to give up when things get hard.

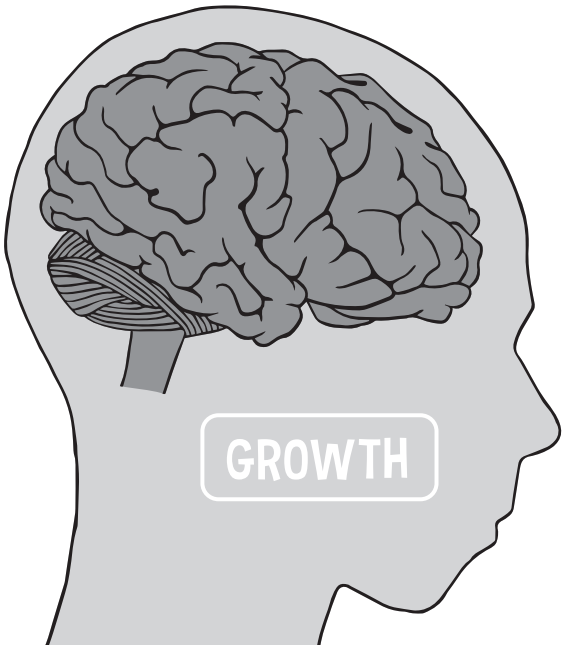
In a growth mindset, mistakes are seen as learning opportunities, challenges are welcomed, and students persevere with effort, leading to a desire to learn even more.

Teaching students about a growth mindset and the science behind it, including brain plasticity, has helped countless students to grasp the idea that they can achieve their dreams, no matter their starting points.

The activities in this book support the growth-mindset philosophy. With practice and positive reinforcement, students will be able to adopt this flexible, supportive, and uplifting perspective.



knowledge is unchanging



knowledge can grow

I can LEARN from my MISTAKES.

"Failure is interesting—it's part of making progress. You never learn from success, but you do learn from failure."

James Dyson

If at first you fail, try, try again! In this unit, students will learn the value of mistakes and how important they are in the journey to success.

★ Reading Passage: James Dyson

Billionaire inventor James Dyson believes failure is what drives success. After spending 15 years creating his first vacuum cleaner, his innovative designs are now popular worldwide.

★ Short-Answer Activity: Beautiful Mistakes

After reading James Dyson's story, students will reflect on what it feels like to make a mistake and what can be learned from failure. Students will then share their answers with partners.

★ Small-Group Activity: Invented by Mistake

Break the class up into small groups. Each group will read the first part of the worksheet together, about inventions made by mistake. All these inventions were made by mistake, and the stories behind each are easily found online. Discuss as a class. Then ask students to write a creative story about something invented by mistake; ask for volunteers to share their stories.

★ Whole-Class Activity: The Most Magnificent Thing

As a class, read *The Most Magnificent Thing* by Ashley Spires. Discuss the process of inventing and the main character's frustration with failure. Students will then describe and draw their own inventions. Ask for volunteers to share their inventions.

★ Journal Prompt: Try, Try Again

Digging deeper into the frustration of making a mistake, students will reflect on trying again and how a fear of making mistakes might be holding them back.

★ Growing Beyond

Ask students to journal about how they will react when they make mistakes in the future and how they can help classmates with their mistakes, too.

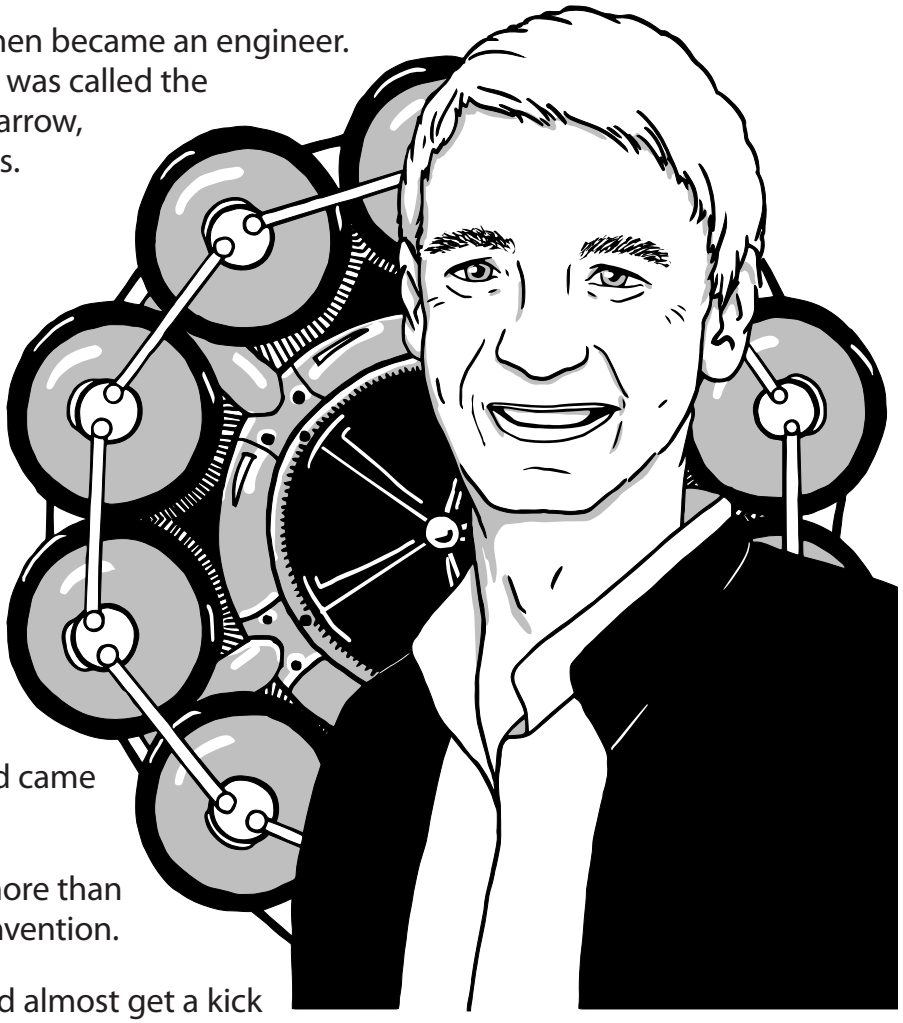
- ★ What do you say to yourself when you make a mistake?
- ★ What is a new thought you could have the next time you make a mistake?
- ★ What will you say if you see a friend make a mistake?

Name: _____ **Date:** _____

JAMES DYSON

James Dyson wasn't always a billionaire inventor. He started building things at a young age.

James went to art school and then became an engineer. The first thing he ever invented was called the Ballbarrow. It was like a wheelbarrow, but with a ball instead of wheels.



One day, he noticed that his vacuum cleaner didn't suck up dirt very well. It just pushed all of the dirt around the floor.

James had an idea of how to make a better vacuum cleaner. He started making and testing his ideas. But they didn't work.

Each time his model failed, he tried again. Over and over again, he kept learning from his mistakes. James wouldn't give up. He just got creative and came up with the next version.

James spent 15 years making more than 5,000 different versions of his invention.

"We have to embrace failure and almost get a kick out of it," James said. "Life is a mountain of solvable problems, and I enjoy that."

Finally, James made a version of his vacuum cleaner that worked. Then he had to get other people to believe in his dream. He had to get other people to buy it! That was even harder than making it in the first place.

But with time and effort, James was able to find some stores that wanted to sell his vacuum.

Now, his Dyson designs are sold all over the world. His company makes fans, air purifiers, and even hair stylers! And of course, he still makes vacuum cleaners.

Name: _____ **Date:** _____

BEAUTIFUL MISTAKES

Directions: As you read James Dyson's story, did you think about projects you have tried and failed at? Sometimes, it takes many versions of our ideas before they become what we want them to be.

Think about a time you made a mistake trying to create something you cared about. Write your answers on the lines below. Once you're done, share and discuss your answers with a partner.

1. When was the last time you made a mistake? What was it? How did you feel?

2. How do you think James felt when his designs kept failing? Why do you think he felt that way?

3. Do you think that you can learn from mistakes? Why or why not?

4. James says, "Life is a mountain of solvable problems." When you make a mistake or try something that doesn't work, how do you try again? What do you say to yourself?

5. Mistakes can be beautiful because they teach us lessons. What is a beautiful mistake you have made that taught you something valuable?

Name: _____ **Date:** _____

INVENTED BY MISTAKE

Directions: In a group with two to three other students, find out which of these things was invented by mistake. Circle your answers. Then as a class, discuss your choices.

potato chips	microwave oven	Post-it Notes
Silly Putty	fireworks	chocolate chip cookies

Directions: On your own, write a creative story about an invention that was made by mistake. If you need more room, use a separate piece of paper. Here are some questions to get you started:

- ★ Who invented it?
- ★ What were they trying to invent?
- ★ How many mistakes did they make?
- ★ What did they end up inventing instead?
- ★ How does their new invention make the world a better place?