3rd Grade 5E UNITS

















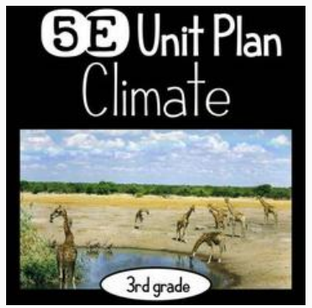














Full Yearlong BUNDLE of Science Inquiry

PREVIEW

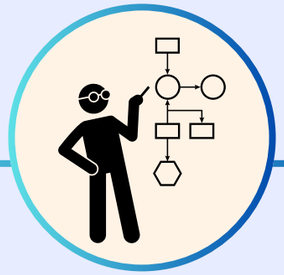
KEEP SCROLLING TO SEE WHAT'S INSIDE!

WHY YOU WILL LOVE THIS BUNDLE



5E Magic

The 5E Instructional Model (Engage, Explore, Explain, Elaborate, Evaluate) weaves engagement, hands-on exploration, and deep understanding into every lesson.



Structured Brilliance

With multiple lessons for each “E,” teachers get a scaffolded framework that moves students through the inquiry process. No more lesson-planning headaches!



Inquiry Powerhouse

Inquiry-based learning isn’t just a buzzword; it’s the heartbeat of science learning. This bundle empowers teachers to guide curious minds toward discovery.

WHAT IS 5E MODEL OF INSTRUCTION?

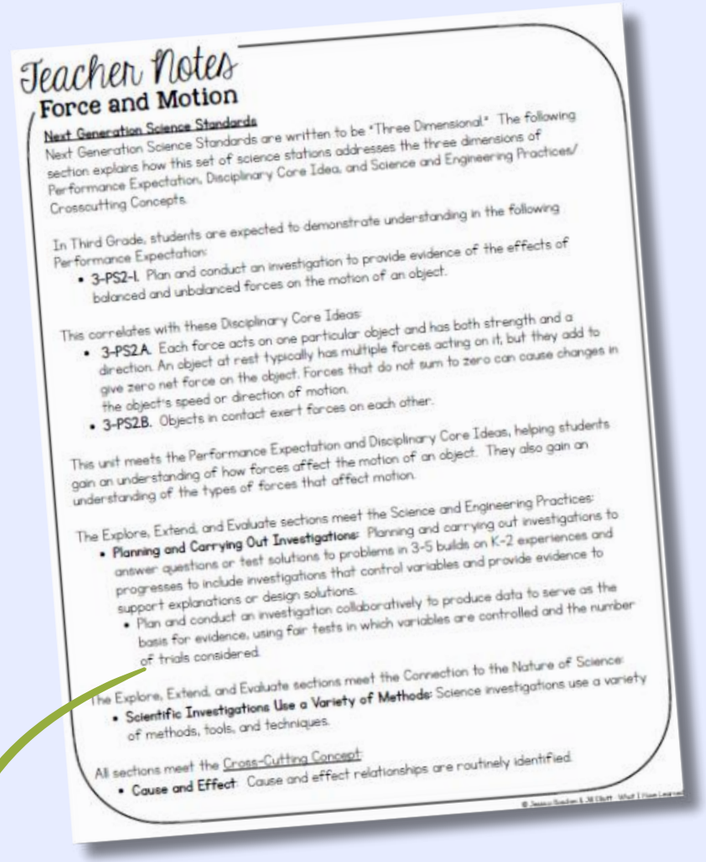
The 5E Instructional Model promotes student-led, inquiry-based science instruction, with the teacher guiding students through questions, investigations, experiences, and research. This approach helps students develop a deep understanding of fundamental scientific concepts, with each stage serving as a foundation for the next.

ENGAGE	EXPLORE	EXPLAIN	EXTEND	EVALUATE
Student interest is piqued. Students make connections with prior experience and understanding is connected.	Students explore the concept through hands-on activities, identify real questions, develop a hypothesis and test variables.	The direct instruction phase presented in a collaborative fashion. Vocabulary is defined, concepts are explained.	Generalizations about the new learning is applied to previous investigations and new hypotheses are tested to draw conclusions.	Students evaluate their own learning and prove what they know in writing, conversation and demonstration.

Do you want to know more about 5E Instructional Model? Just click the link below

LEARN MORE

WHAT IS INCLUDED IN EACH 5E UNIT?



Teacher Notes
Force and Motion

Next Generation Science Standards
Next Generation Science Standards are written to be "Three Dimensional." The following section explains how this set of science stations addresses the three dimensions of Performance Expectation, Disciplinary Core Idea, and Science and Engineering Practices/ Crosscutting Concepts.

In Third Grade, students are expected to demonstrate understanding in the following Performance Expectation:

- **3-PS2-1.** Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

This correlates with these Disciplinary Core Ideas:

- **3-PS2.A.** Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion.
- **3-PS2.B.** Objects in contact exert forces on each other.

This unit meets the Performance Expectation and Disciplinary Core Ideas, helping students gain an understanding of how forces affect the motion of an object. They also gain an understanding of the types of forces that affect motion.

The Explore, Extend, and Evaluate sections meet the Science and Engineering Practices:

- **Planning and Carrying Out Investigations:** Planning and carrying out investigations to answer questions or test solutions to problems in 3-5 builds on K-2 experiences and progresses to include investigations that control variables and provide evidence to support explanations or design solutions.
  - Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered.

The Explore, Extend, and Evaluate sections meet the Connection to the Nature of Science:

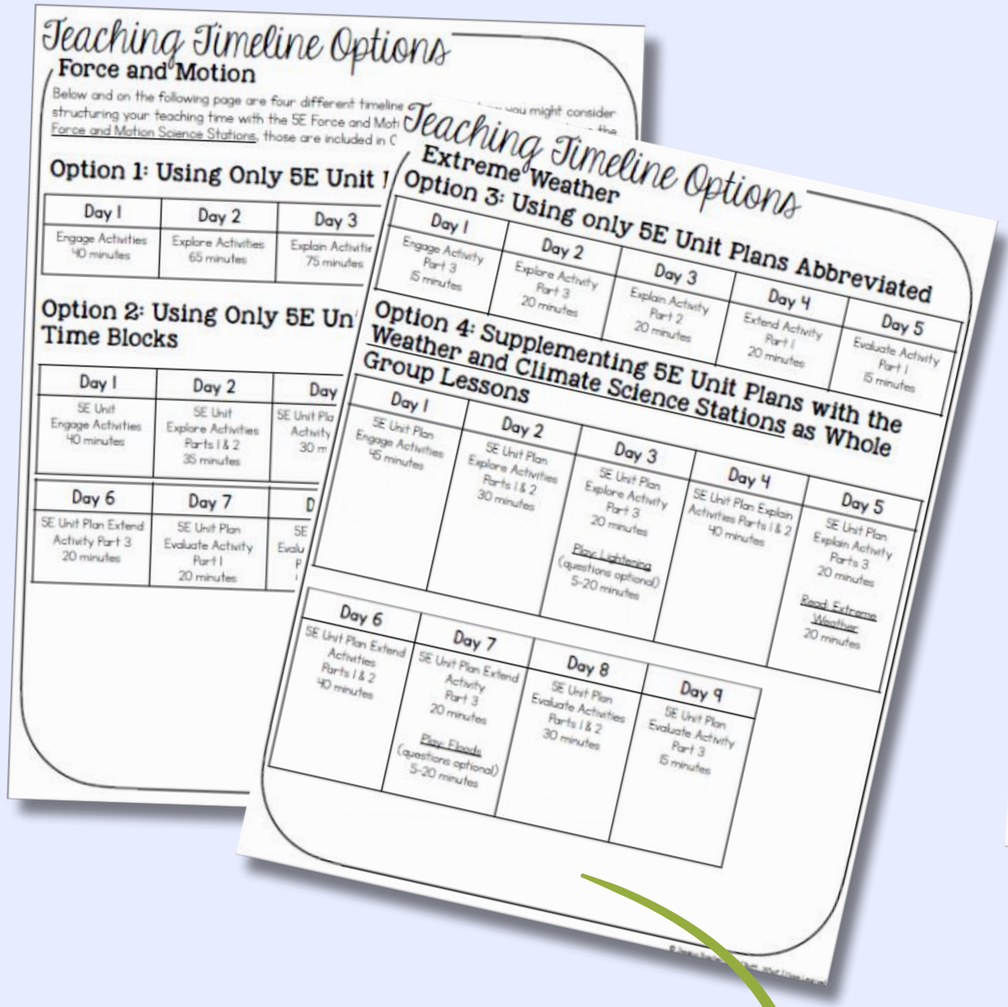
- **Scientific Investigations Use a Variety of Methods:** Science investigations use a variety of methods, tools, and techniques.

All sections meet the Cross-Cutting Concept:

- **Cause and Effect**: Cause and effect relationships are routinely identified.

© Jessica Bowden & 3M Chart - What I Know Lessons

Explanation of the Standards in Each Unit



Teaching Timeline Options
Force and Motion

Below and on the following page are four different timeline ... you might consider structuring your teaching time with the 5E Force and Mot... Force and Motion Science Stations, those are included in C...

Option 1: Using Only 5E Unit ...

Day 1	Day 2	Day 3
Engage Activities 40 minutes	Explore Activities 65 minutes	Explain Activiti... 75 minutes

Option 2: Using Only 5E Un... Time Blocks

Day 1	Day 2	Day
5E Unit Engage Activities 40 minutes	5E Unit Explore Activities Parts 1 & 2 35 minutes	5E Unit Pla... Activity ... 30 m...
Day 6	**Day 7**	**D...**
5E Unit Plan Extend Activity Part 3 20 minutes	5E Unit Plan Evaluate Activity Part 1 20 minutes	5E... Evalu... P...

Teaching Timeline Options
Extreme Weather

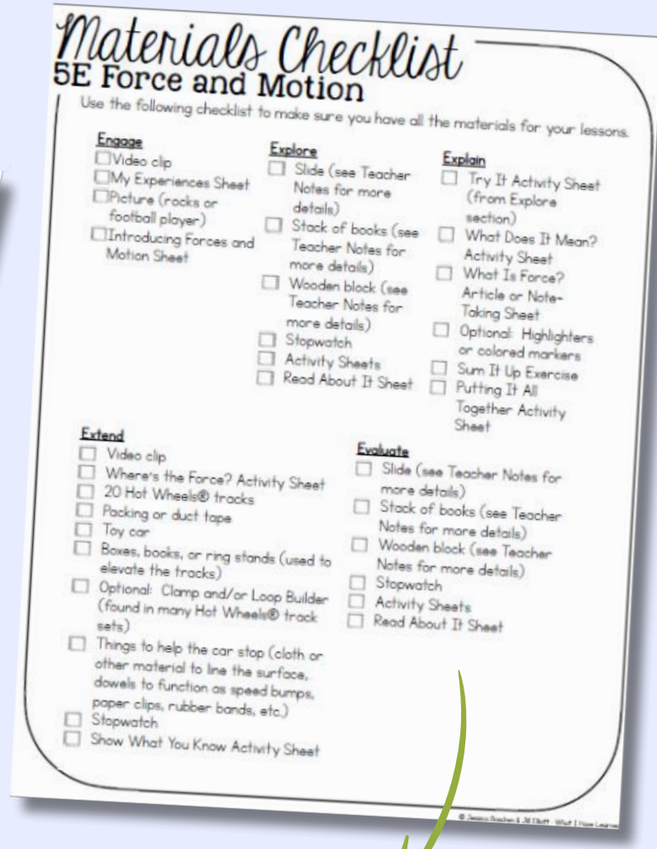
Option 3: Using only 5E Unit Plans Abbreviated

Day 1	Day 2	Day 3	Day 4	Day 5
Engage Activity Part 3 15 minutes	Explore Activity Part 3 20 minutes	Explain Activity Part 2 20 minutes	Extend Activity Part 1 20 minutes	Evaluate Activity Part 1 15 minutes

Option 4: Supplementing 5E Unit Plans with the Weather and Climate Science Stations as Whole Group Lessons

Day 1	Day 2	Day 3	Day 4	Day 5
5E Unit Plan Engage Activities 45 minutes	5E Unit Plan Explore Activities Parts 1 & 2 30 minutes	5E Unit Plan Explore Activity Part 3 20 minutes Play: Lightning (questions optional) 5-20 minutes	5E Unit Plan Explain Activities Parts 1 & 2 40 minutes	5E Unit Plan Explain Activity Parts 3 20 minutes Read: Extreme Weather 20 minutes
Day 6	**Day 7**	**Day 8**	**Day 9**	
5E Unit Plan Extend Activities Parts 1 & 2 40 minutes	5E Unit Plan Extend Activity Part 3 20 minutes Play: Floods (questions optional) 5-20 minutes	5E Unit Plan Evaluate Activities Parts 1 & 2 30 minutes	5E Unit Plan Evaluate Activity Part 3 15 minutes	

4 Teaching Timeline Options



Materials Checklist
5E Force and Motion

Use the following checklist to make sure you have all the materials for your lessons.

Engage
- ☐ Video clip
- ☐ My Experiences Sheet
- ☐ Picture (rocks or football player)
- ☐ Introducing Forces and Motion Sheet

Explore
- ☐ Slide (see Teacher Notes for more details)
- ☐ Stack of books (see Teacher Notes for more details)
- ☐ Wooden block (see Teacher Notes for more details)
- ☐ Stopwatch
- ☐ Activity Sheets
- ☐ Read About It Sheet

Explain
- ☐ Try It Activity Sheet (from Explore section)
- ☐ What Does It Mean? Activity Sheet
- ☐ What Is Force? Article or Note-Taking Sheet
- ☐ Optional: Highlighters or colored markers
- ☐ Sum It Up Exercise
- ☐ Putting It All Together Activity Sheet

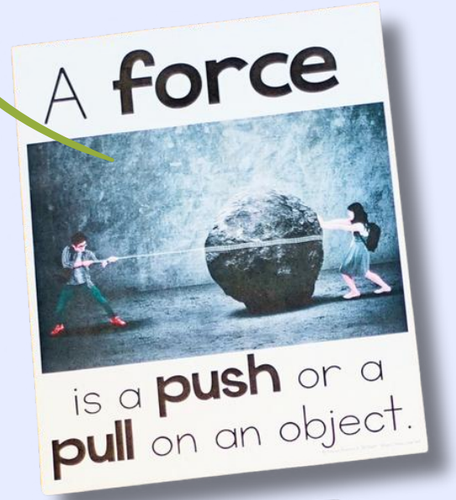
Extend
- ☐ Video clip
- ☐ Where's the Force? Activity Sheet
- ☐ 20 Hot Wheels® tracks
- ☐ Packing or duct tape
- ☐ Toy car
- ☐ Boxes, books, or ring stands (used to elevate the tracks)
- ☐ Optional: Clamp and/or Loop Builder (found in many Hot Wheels® track sets)
- ☐ Things to help the car stop (cloth or other material to line the surface, dowels to function as speed bumps, paper clips, rubber bands, etc.)
- ☐ Stopwatch
- ☐ Show What You Know Activity Sheet

Evaluate
- ☐ Slide (see Teacher Notes for more details)
- ☐ Stack of books (see Teacher Notes for more details)
- ☐ Wooden block (see Teacher Notes for more details)
- ☐ Stopwatch
- ☐ Activity Sheets
- ☐ Read About It Sheet

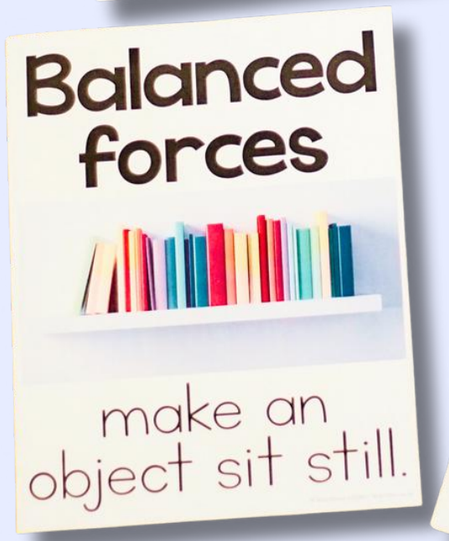
© Jessica Bowden & 3M Chart - What I Know Lessons

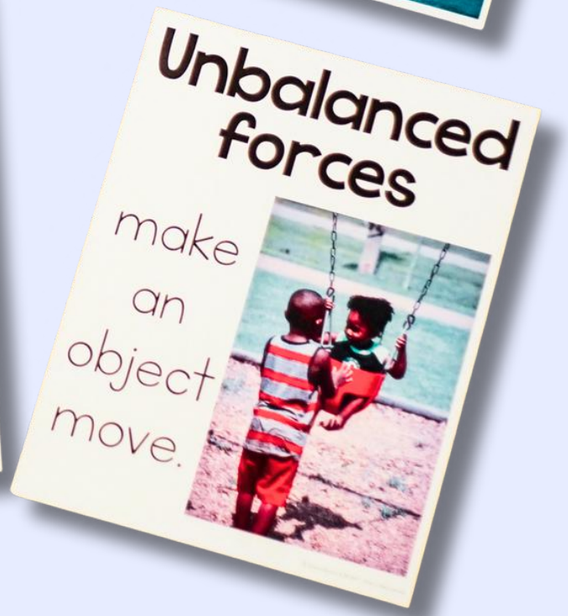
Materials List for Each Unit

Big Idea Posters

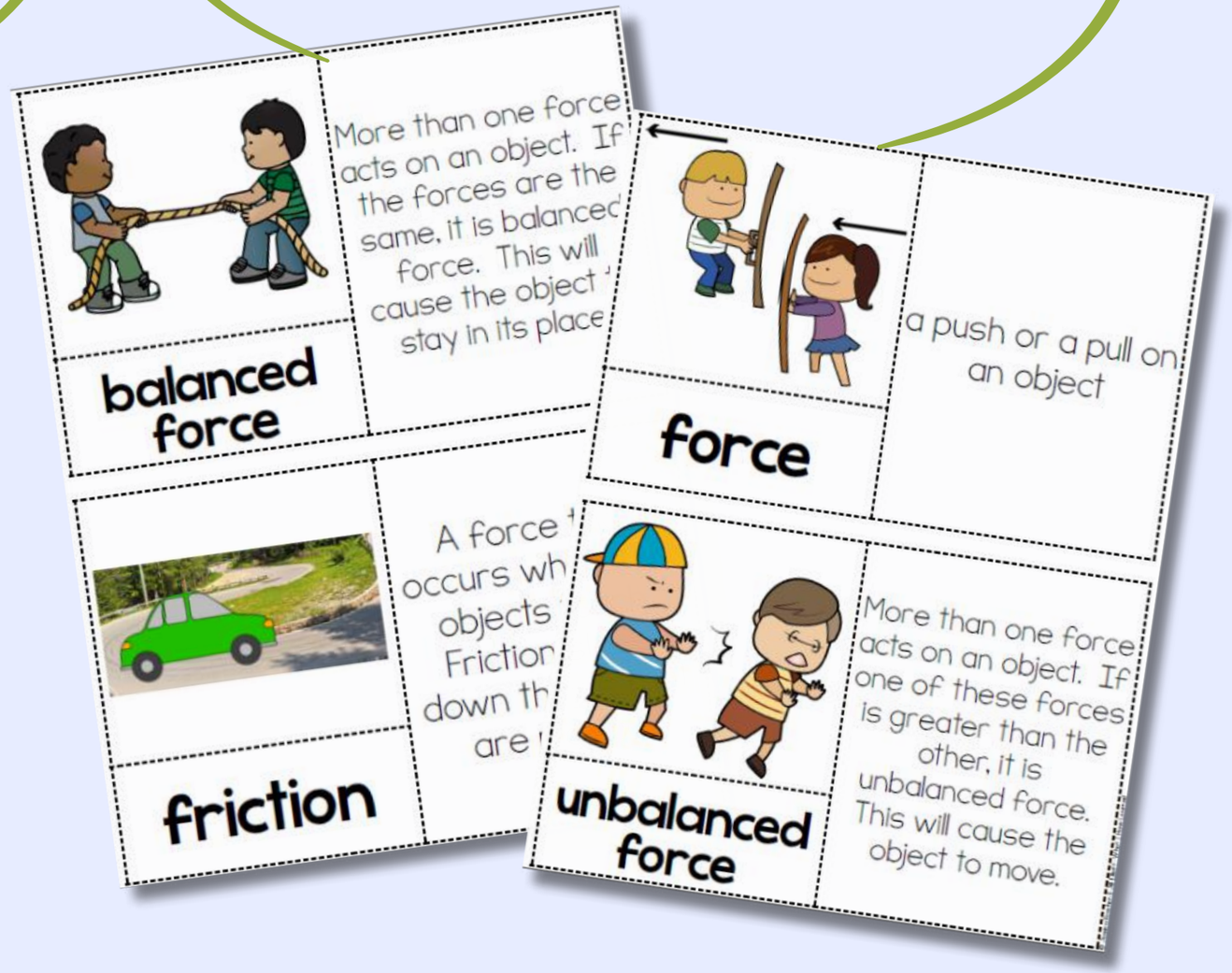








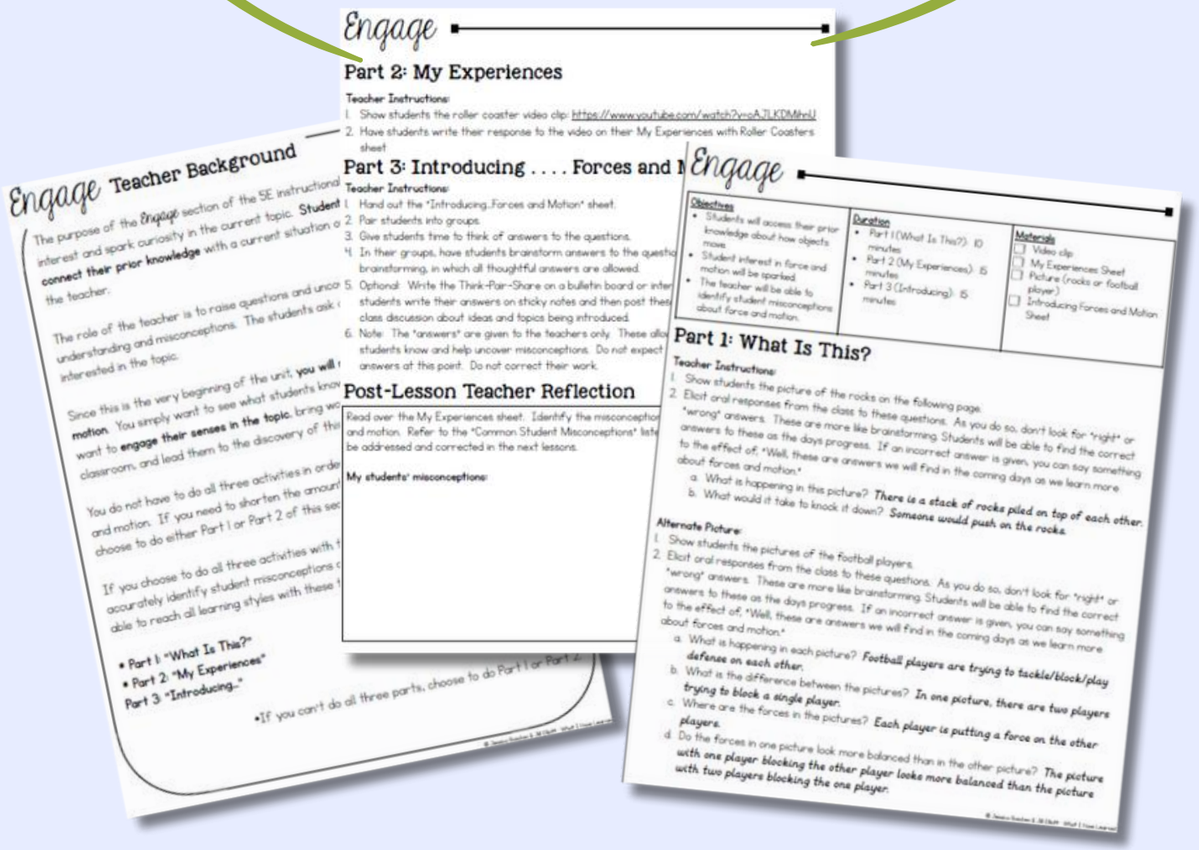
3-Part Vocabulary Cards



Ext Tickets
(in three formats)



Lesson Plans:
3 Parts to Each 5E



Differentiated Text

Explain **Part 2: What is Force: Article**

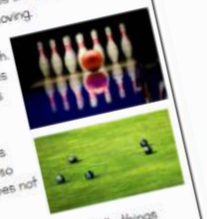
Name: _____

What happens when a bowling ball hits the pins? A third force is now acting on the pins. The force of the ball is greater than the other forces. This force causes the pins to fall down.



Sometimes, the forces acting on an object are not all the same. When one force is greater than another force, it is an unbalanced force. An unbalanced force makes the object move. Since the pins fell down, we know that there was an unbalanced force.

Another force that acts on objects is friction. Friction is a force that occurs when two objects are bumpy. Even objects that seem smooth have tiny bumps. When two objects touch, the bumps catch on each other. This is friction. If the objects are moving, the bumps slow them down. If the objects are still, they keep them from moving.



The floor in a bowling alley is very smooth. The ball rolls easily down the lane. There is only a little friction. The bowling ball does not slow down very fast.

A different game is lawn bowling. It is played on grass. Grass is very bumpy, so there is more friction. The friction does not let the balls roll very far.

Forces are all around us. Gravity is a force that pulls things down. Friction is a force that pushes things to a stop. The force from your foot pushes a ball in the air. The force from a truck pulls a trailer behind it. Look around you. What other forces can you see?

© Jessica Boucher

Explain **Part 2: What is Force: Article**

Name: _____

In one bowling lane, all the pins are standing up. They are still and not moving. In another lane, a bowling ball is knocking down the pins. Some pins are moving and others are not. Which pins have force acting on them? The answer is that all the pins have forces acting on them. Even the pins that are not moving have forces acting on them.

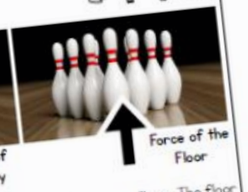


A force is a push or a pull on an object. Forces affect the way an object moves.



There are forces acting on the pins. One force acting on them is the force of gravity. Gravity is a force that pulls things toward Earth.





Another force acting on the pins comes from the floor. The floor pushes up on the pins. The force of the floor holds the pins on the floor.

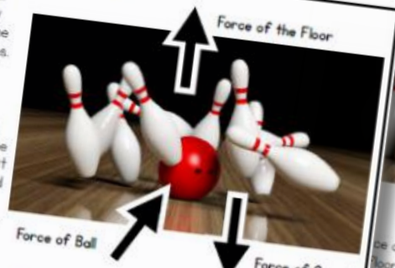


Gravity pulls down, but the floor pushes up. More than one force acts on the pins. In this case, the forces are the same, but they work in the opposite direction. This makes a balanced force. When balanced forces act on an object, the object does not move. Balanced forces make the pins sit still on the floor.

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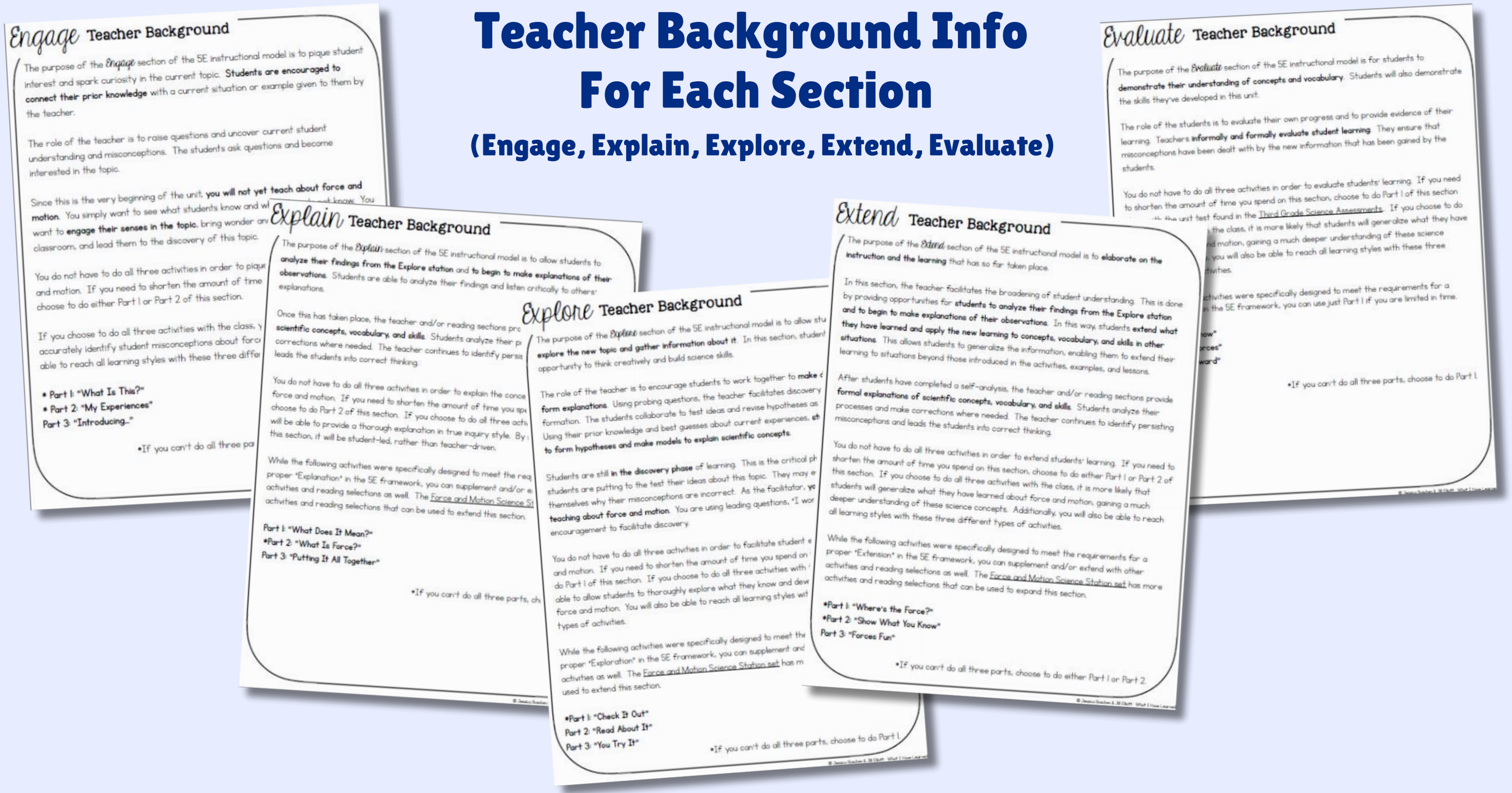
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Teacher Background Info For Each Section

(Engage, Explain, Explore, Extend, Evaluate)



Engage Teacher Background

The purpose of the *Engage* section of the 5E instructional model is to pique student interest and spark curiosity in the current topic. **Students are encouraged to connect their prior knowledge** with a current situation or example given to them by the teacher.

The role of the teacher is to raise questions and uncover current student understanding and misconceptions. The students ask questions and become interested in the topic.

Since this is the very beginning of the unit, **you will not yet teach about force and motion**. You simply want to see what students know and wi… want to **engage their senses in the topic**, bring wonder an… classroom, and lead them to the discovery of this topic.

You do not have to do all three activities in order to piqu… and motion. If you need to shorten the amount of time … choose to do either Part 1 or Part 2 of this section.

If you choose to do all three activities with the class, y… accurately identify student misconceptions about forc… able to reach all learning styles with these three diffe…

*** Part 1: "What Is This?"**
*** Part 2: "My Experiences"**
Part 3: "Introducing..."

*If you can't do all three pa…

Explain Teacher Background

The purpose of the *Explain* section of the 5E instructional model is to allow students to **analyze their findings from the Explore station** and **to begin to make explanations of their observations**. Students are able to analyze their findings and listen critically to others' explanations.

Once this has taken place, the teacher and/or reading sections pro… **scientific concepts, vocabulary, and skills**. Students analyze their p… corrections where needed. The teacher continues to identify persis… leads the students into correct thinking.

You do not have to do all three activities in order to explain the conce… force and motion. If you need to shorten the amount of time you sp… choose to do Part 2 of this section. If you choose to do all three acti… will be able to provide a thorough explanation in true inquiry style. By … this section, it will be student-led, rather than teacher-driven.

While the following activities were specifically designed to meet the req… proper "Explanation" in the 5E framework, you can supplement and/or e… activities and reading selections as well. The Force and Motion Science St… activities and reading selections that can be used to extend this section.

Part 1: "What Does It Mean?"
***Part 2: "What Is Force?"**
Part 3: "Putting It All Together"

*If you can't do all three parts, ch…

Explore Teacher Background

The purpose of the *Explore* section of the 5E instructional model is to allow stu… **explore the new topic and gather information about it**. In this section, student… opportunity to think creatively and build science skills.

The role of the teacher is to encourage students to work together to **make … form explanations**. Using probing questions, the teacher facilitates discovery … formation. The students collaborate to test ideas and revise hypotheses as … Using their prior knowledge and best guesses about current experiences, st… **to form hypotheses and make models to explain scientific concepts**.

Students are still **in the discovery phase** of learning. This is the critical ph… students are putting to the test their ideas about this topic. They may e… themselves why their misconceptions are incorrect. As the facilitator, yo… **teaching about force and motion**. You are using leading questions, "I wor… encouragement to facilitate discovery.

You do not have to do all three activities in order to facilitate student e… and motion. If you need to shorten the amount of time you spend on … do Part 1 of this section. If you choose to do all three activities with … able to allow students to thoroughly explore what they know and deve… force and motion. You will also be able to reach all learning styles wit… types of activities.

While the following activities were specifically designed to meet the … proper "Exploration" in the 5E framework, you can supplement and … activities as well. The Force and Motion Science Station set has m… used to extend this section.

***Part 1: "Check It Out"**
Part 2: "Read About It"
Part 3: "You Try It"

*If you can't do all three parts, choose to do Part 1.

Extend Teacher Background

The purpose of the *Extend* section of the 5E instructional model is to **elaborate on the instruction and the learning** that has so far taken place.

In this section, the teacher facilitates the broadening of student understanding. This is done by providing opportunities for **students to analyze their findings from the Explore station and to begin to make explanations of their observations**. In this way, students **extend what they have learned and apply the new learning to concepts, vocabulary, and skills in other situations**. This allows students to generalize the information, enabling them to extend their learning to situations beyond those introduced in the activities, examples, and lessons.

After students have completed a self-analysis, the teacher and/or reading sections provide **formal explanations of scientific concepts, vocabulary, and skills**. Students analyze their processes and make corrections where needed. The teacher continues to identify persisting misconceptions and leads the students into correct thinking.

You do not have to do all three activities in order to extend students' learning. If you need to shorten the amount of time you spend on this section, choose to do either Part 1 or Part 2 of this section. If you choose to do all three activities with the class, it is more likely that students will generalize what they have learned about force and motion, gaining a much deeper understanding of these science concepts. Additionally, you will also be able to reach all learning styles with these three different types of activities.

While the following activities were specifically designed to meet the requirements for a proper "Extension" in the 5E framework, you can supplement and/or extend with other activities and reading selections as well. The Force and Motion Science Station set has more activities and reading selections that can be used to expand this section.

***Part 1: "Where's the Force?"**
***Part 2: "Show What You Know"**
Part 3: "Forces Fun"

*If you can't do all three parts, choose to do either Part 1 or Part 2.

Evaluate Teacher Background

The purpose of the *Evaluate* section of the 5E instructional model is for students to **demonstrate their understanding of concepts and vocabulary**. Students will also demonstrate the skills they've developed in this unit.

The role of the students is to evaluate their own progress and to provide evidence of their learning. Teachers **informally and formally evaluate student learning**. They ensure that misconceptions have been dealt with by the new information that has been gained by the students.

You do not have to do all three activities in order to evaluate students' learning. If you need to shorten the amount of time you spend on this section, choose to do Part 1 of this section … the unit test found in the Third Grade Science Assessments. If you choose to do … the class, it is more likely that students will generalize what they have … motion, gaining a much deeper understanding of these science … you will also be able to reach all learning styles with these three … tivities.

…tivities were specifically designed to meet the requirements for a … the 5E framework, you can use just Part 1 if you are limited in time.

…ow"
…rces"
…ward"

*If you can't do all three parts, choose to do Part 1.

FREE Google Slides & Form Resources

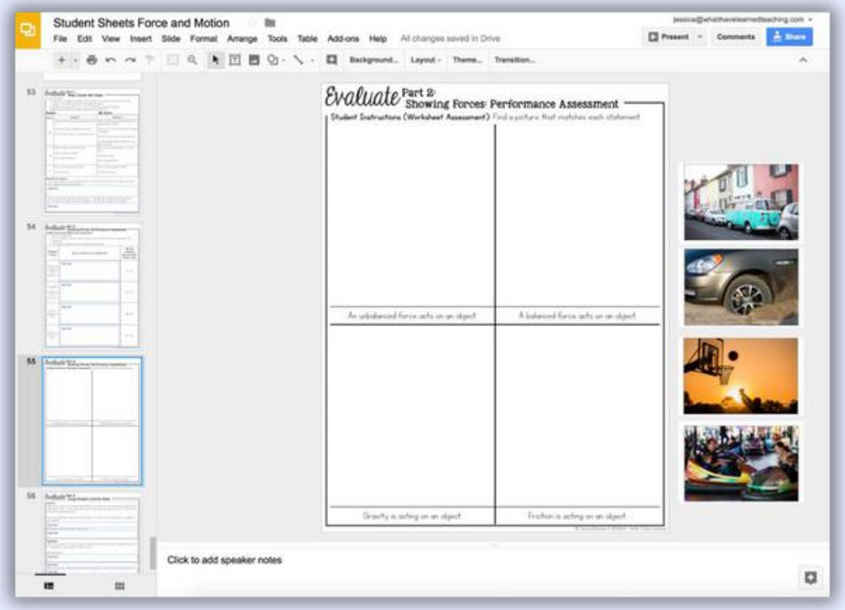
Teacher Presentation

The Teacher Presentation is available as a Google Slide Presentation. It can help you present the content to students and engage them with colorful photos and directions.



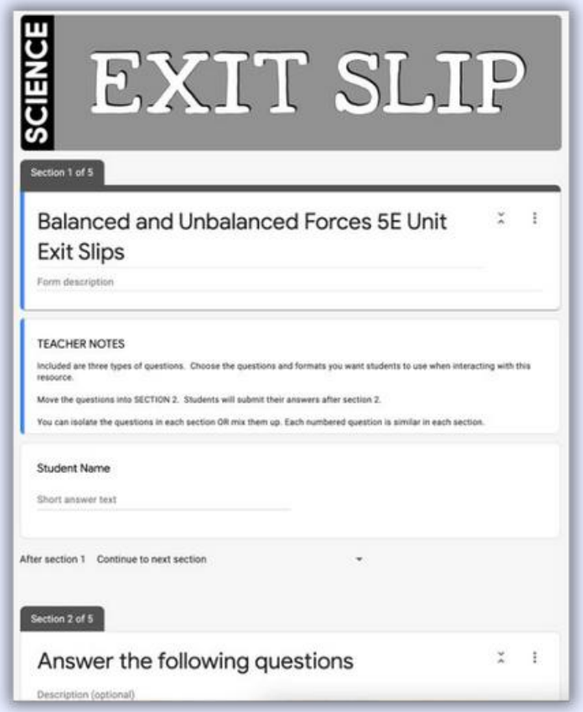
Student Sheets

The Student Sheets are available in Google Slides and provide a paperless option. Not all of the student sheets lend themselves to a paperless option as students are asked to draw some things. Use the slides that work best for your classroom and students.



Exit Slip

The Exit Cards are available in a Google Forms.



TEACHERS LOVE IT!

Extremely comprehensive! I love the various pacing overviews depending on how long your science block is and how many days you have to cover a unit.

Whitney W.



This resource is GREAT! We used it for some summer fun activities for the students who live nearby and wanted to keep learning about science. Thank you for all the hard work! :)

Amanda S.



My passion is making learning accessible to all students.
I love scaffolding learning, breaking down the concepts and building them up so that students can see the connections.
I love figuring out the small components that build up to the big ideas and helping students see it all.



teach MATH

teach SCIENCE

teach READING

teach WRITING

What I have LEARNED