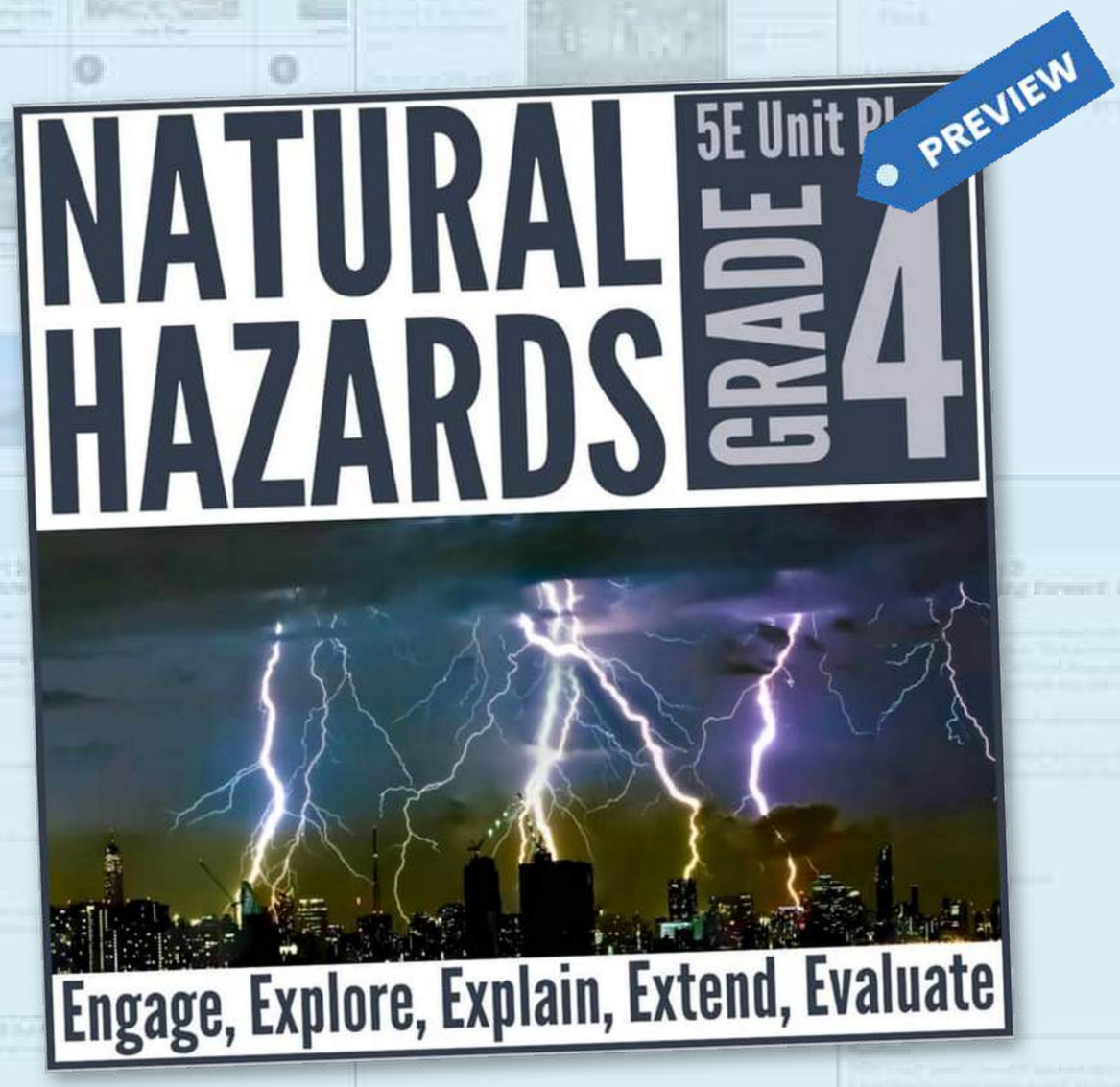


A Complete 5E Science Unit with Lesson Plans

4TH GRADE

NATURAL HAZARDS

Engage, Explore, Explain, Extend, Evaluate

NGSS 4-ESS3-3

KEEP SCROLLING TO SEE WHAT'S INSIDE!

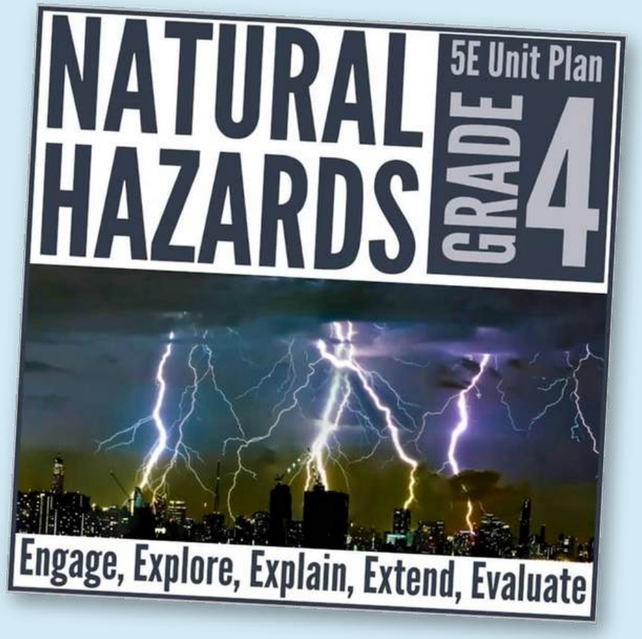
WHAT'S INCLUDED

5E NATURAL HAZARDS UNIT

- 270+ Page 5E Unit Plan
- Lesson Plans for All 5 Phases
- Teacher Notes and Misconceptions
- Materials Checklist and 4 Timelines
- Hands-On Seismograph and Flooding Activities
- Reading Passages on Earthquakes, Floods, and Storms
- Vocabulary Cards and Big Idea Posters
- Exit Tickets in 3 Formats
- Performance Assessment and Model
- Answer Keys for Student Pages
- Google Slides and Google Forms Versions



UNIT AT A GLANCE



- Students build a seismograph, observe flooding, and design ways to protect communities.
- Teacher background, lesson plans, and student pages in every phase.
- Aligned to NGSS 4-ESS3-3.

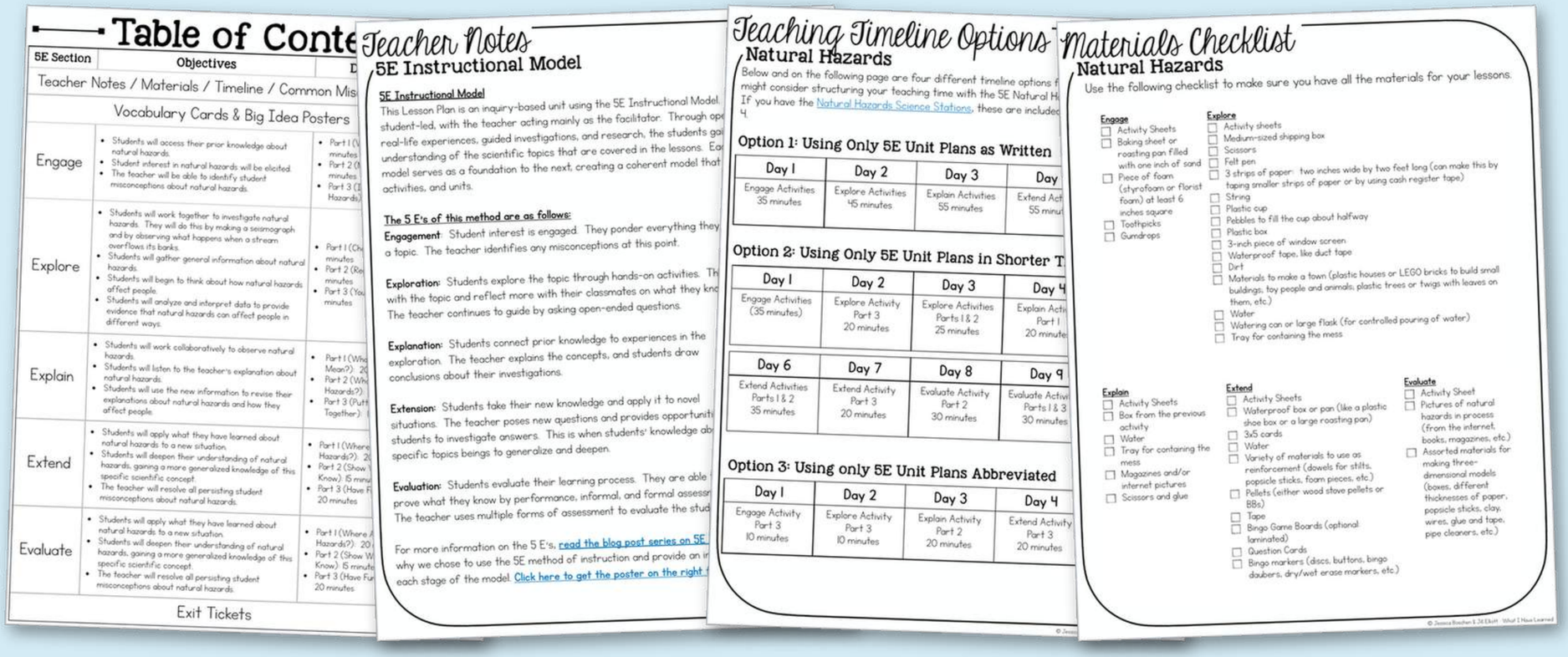
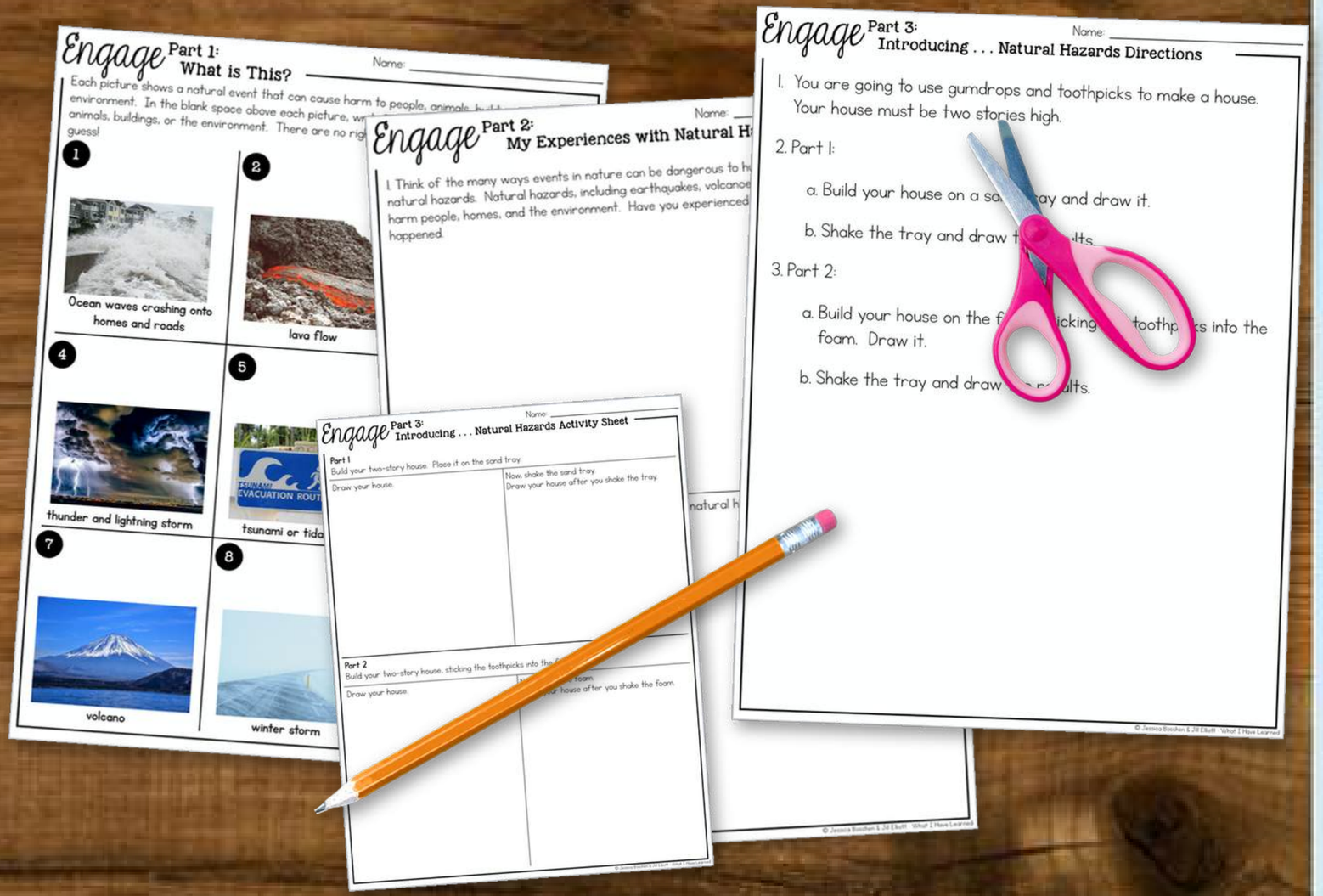


Table of Contents **Teacher Notes** **Timeline Options** **Materials Checklist**

ENGAGE



Teacher background, lesson plans, student pages, and answer key

E E E E E

Spark curiosity about natural hazards

1 What Is This?

Students study pictures of natural hazards and identify possible effects on people and places.

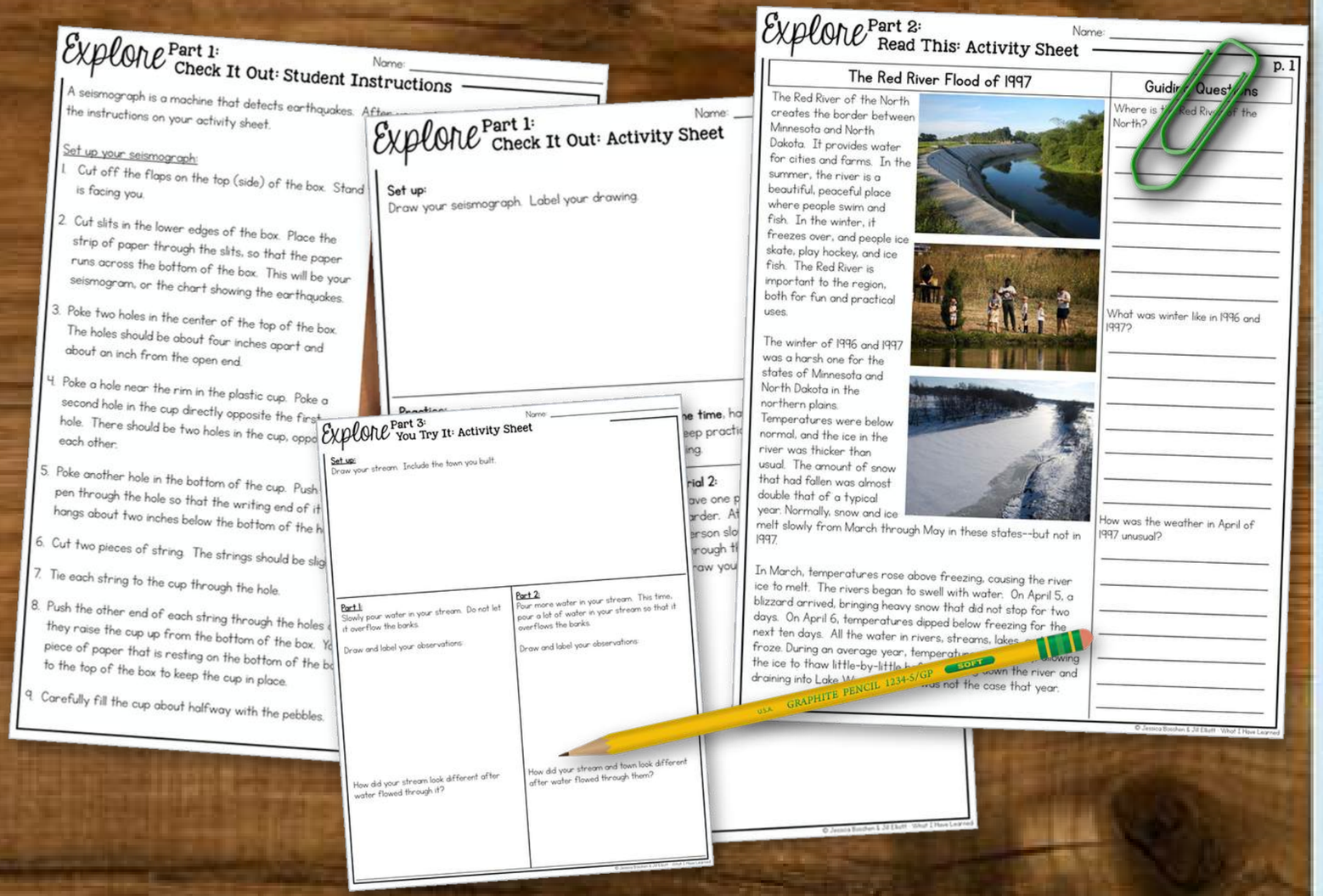
2 My Experiences

Students connect natural hazards to events they have seen or heard about.

3 Introducing Natural Hazards

Students build a small house model and begin thinking about how hazards cause harm.

EXPLORE



Teacher background, lesson plans, student pages, and answer key

E E E E E

Investigate earthquakes and flooding

1 Check It Out

Students build a seismograph and record what it detects.

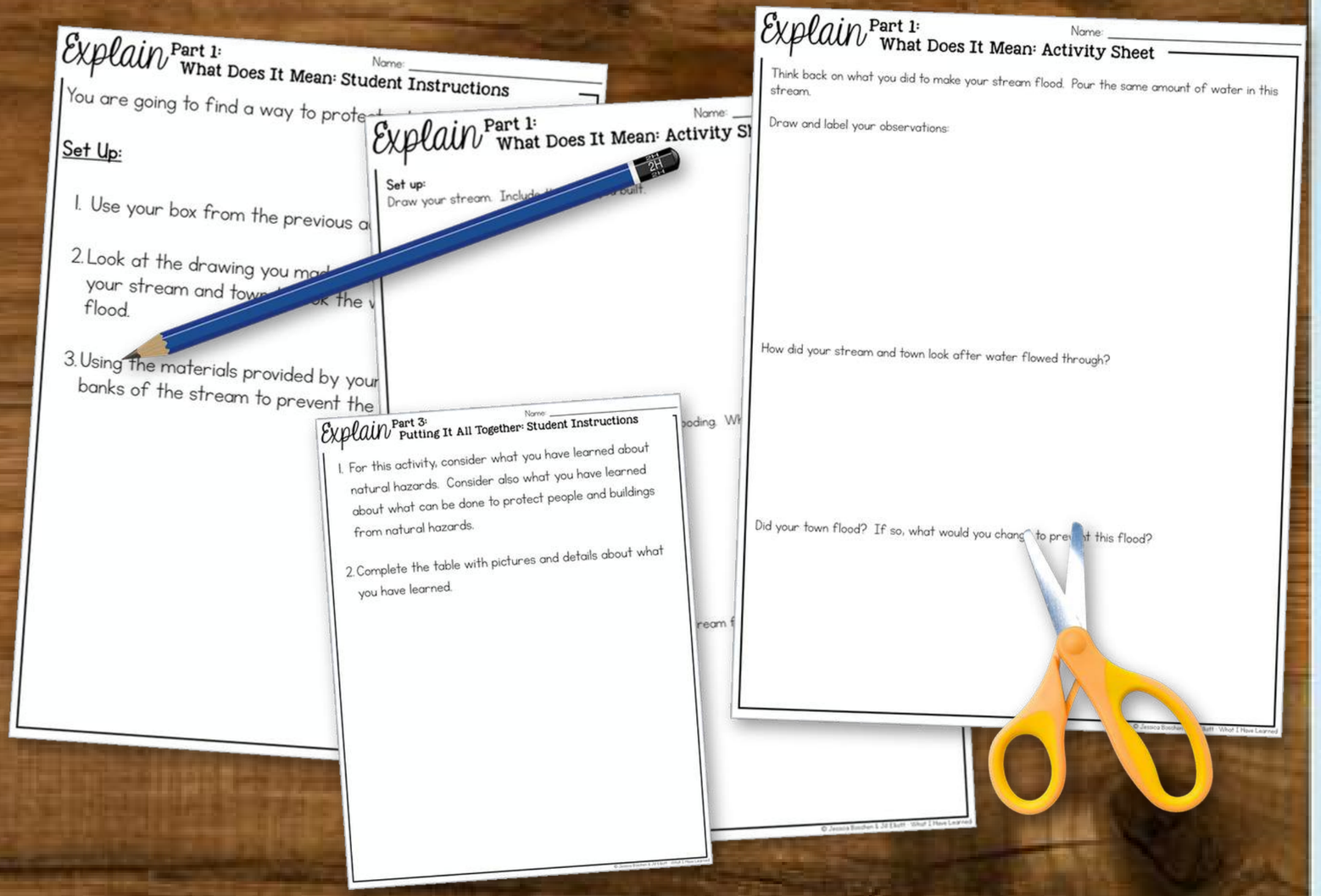
2 Read This

Students read about the Red River Flood of 1997 and use guiding questions.

3 You Try It

Students model a stream flood and record ways to protect a town.

EXPLAIN



Teacher background, lesson plans, student pages, and answer key

E E E E E

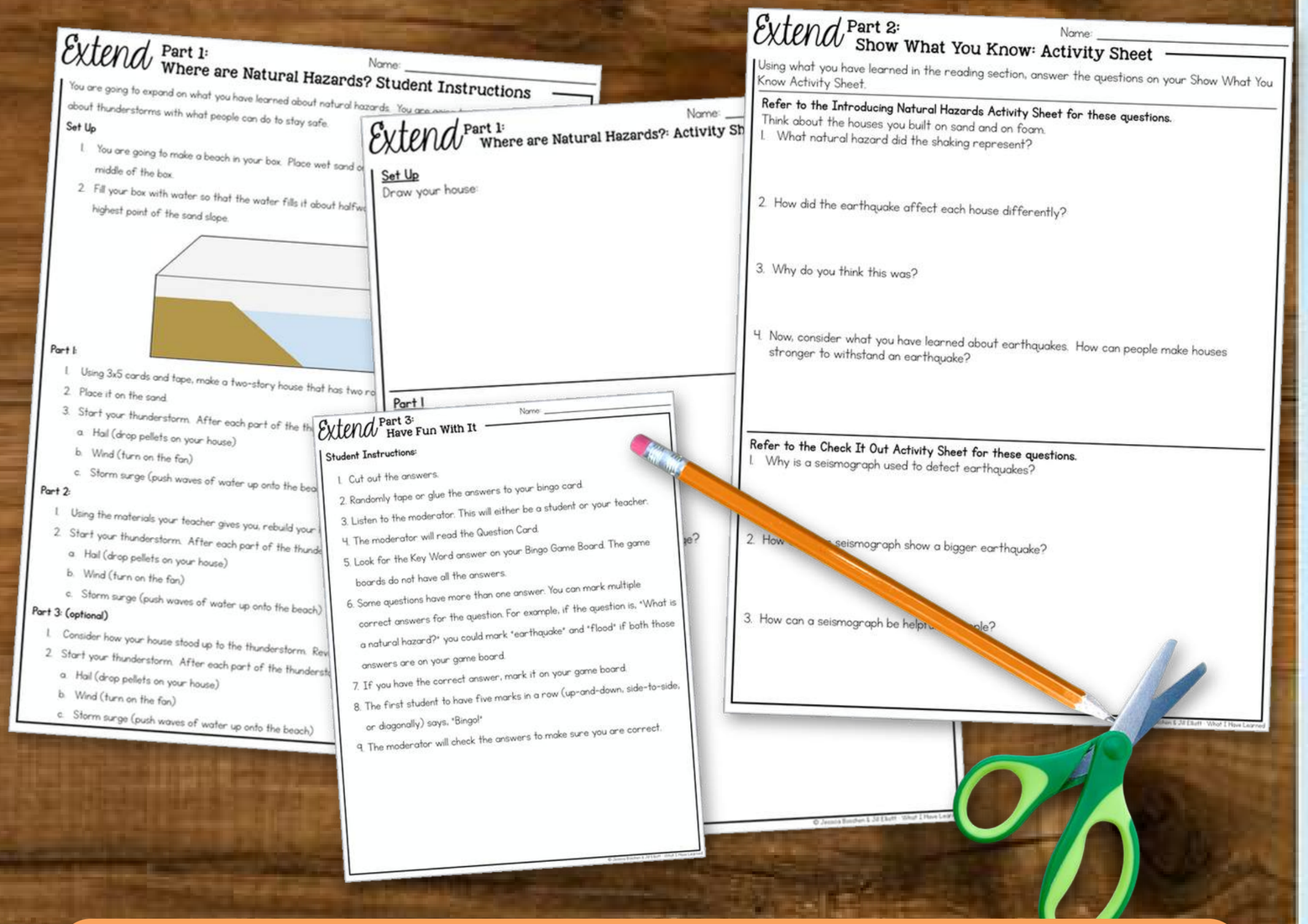
Build explanations from evidence

1 What Does It Mean?
Students design a way to protect a town from a flood and explain their choices.

2 What Are Natural Hazards?
Students read about earthquakes, volcanoes, floods, storms, and the water cycle.

3 Putting It All Together
Students organize evidence and explain how natural Earth processes create hazards.

EXTEND



Teacher background, lesson plans, student pages, and answer key

E E E E E

Apply hazard solutions to new situations

1 Where Are Natural Hazards?

Students apply what they learned to a house model and several hazard situations.

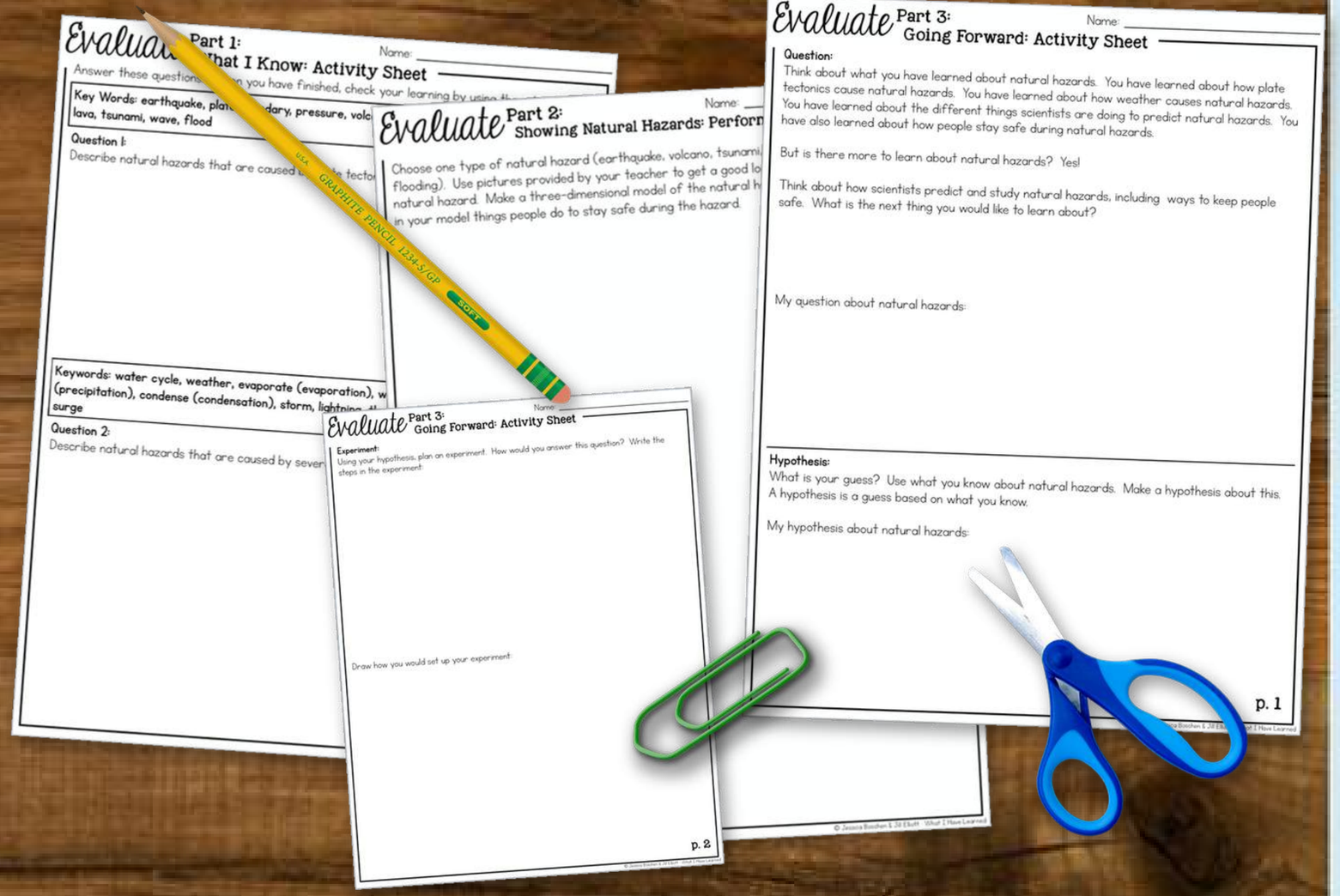
2 Show What You Know

Students compare solutions that can reduce the impact of natural hazards.

3 Have Fun With It

Students review key concepts with a natural hazards bingo game.

EVALUATE



Teacher background, lesson plans, student pages, and answer key

E E E E E

Show understanding with hazard evidence

1 What I Know

Students answer questions about key concepts and vocabulary.

2 Showing Natural Hazards

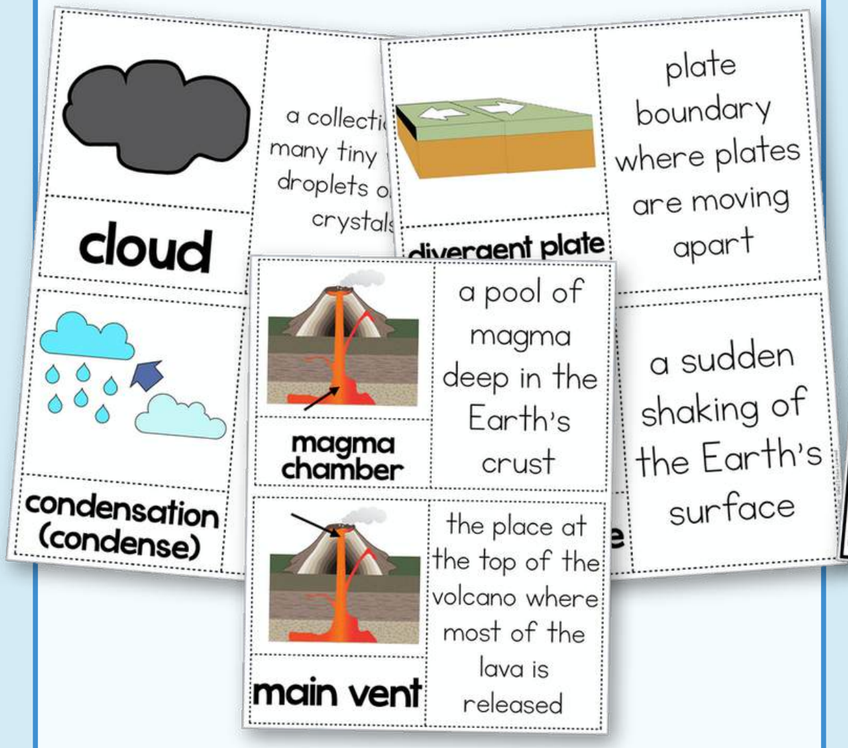
Students use pictures and evidence to classify hazards and explain their effects.

3 Going Forward

Students write a question and plan an investigation about natural hazards.

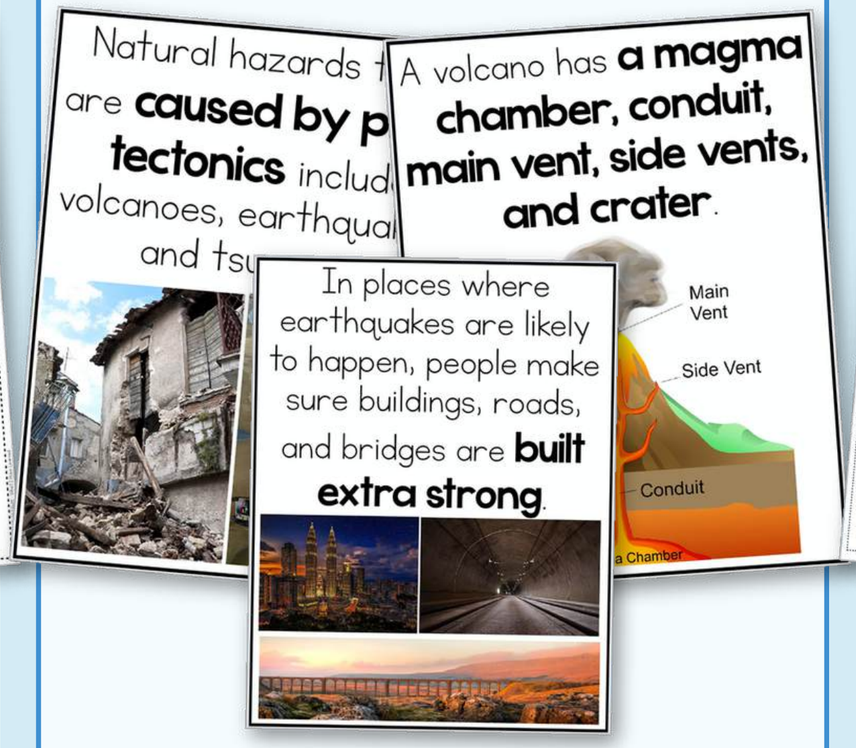
VOCABULARY, POSTERS & EXIT TICKETS

VOCABULARY CARDS



Picture cards and word cards for earthquakes, floods, storms, volcanoes, and related vocabulary.

BIG IDEA POSTERS



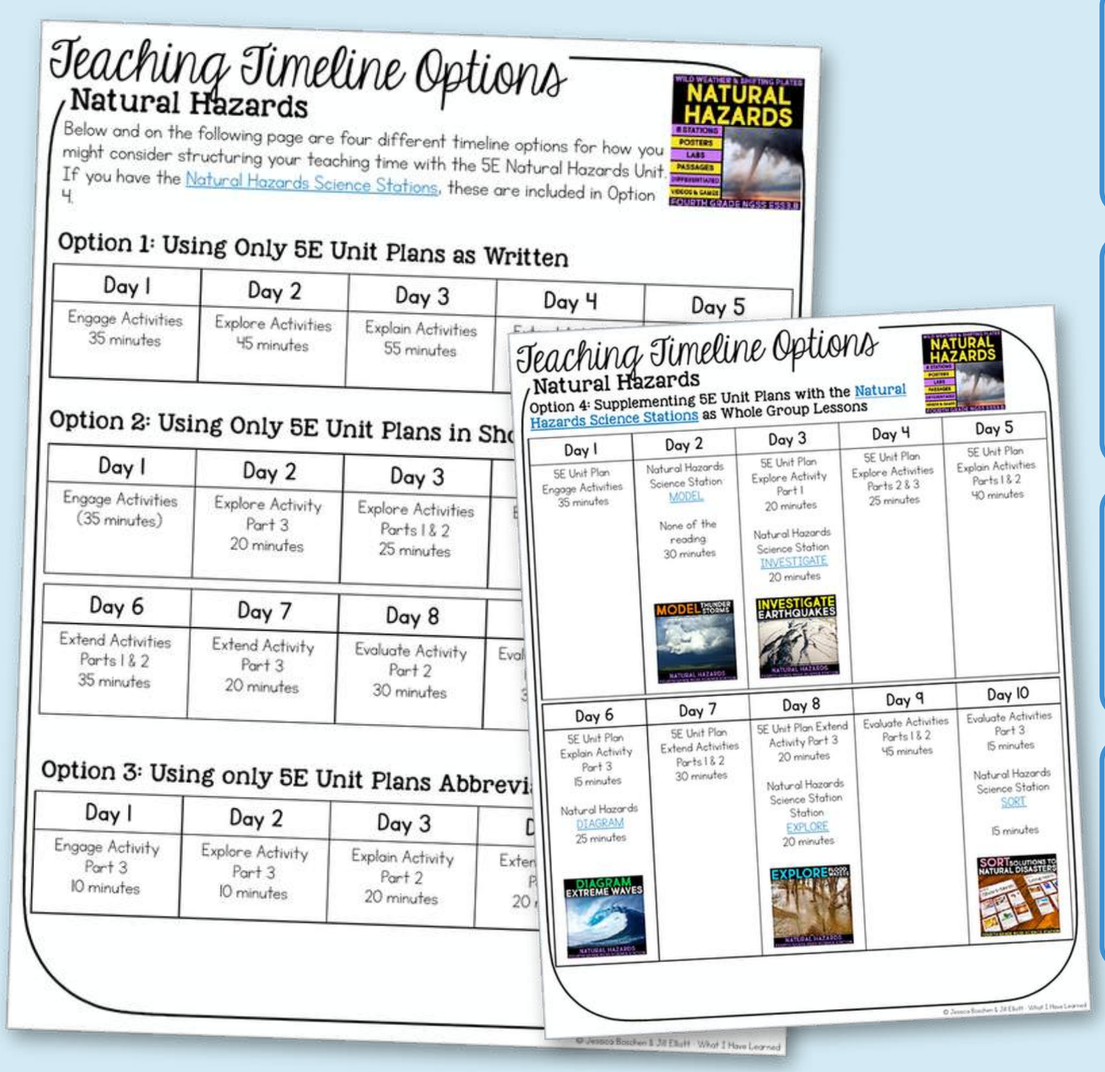
Big idea posters on plate movement, the water cycle, flooding, storms, and community protection.

EXIT TICKETS



Exit-ticket topics in short answer, fill-in-the-blank, and multiple-choice formats.

WAYS TO USE IN YOUR CLASSROOM



Teaching Timeline Options

Natural Hazards

Below and on the following page are four different timeline options for how you might consider structuring your teaching time with the 5E Natural Hazards Unit. If you have the Natural Hazards Science Stations, these are included in Option 4.

Option 1: Using Only 5E Unit Plans as Written

Day 1	Day 2	Day 3	Day 4	Day 5
Engage Activities 35 minutes	Explore Activities 45 minutes	Explain Activities 55 minutes		

Option 2: Using Only 5E Unit Plans in Sho

Day 1	Day 2	Day 3	
Engage Activities (35 minutes)	Explore Activity Part 3 20 minutes	Explore Activities Parts 1 & 2 25 minutes	

Day 6	Day 7	Day 8	
Extend Activities Parts 1 & 2 35 minutes	Extend Activity Part 3 20 minutes	Evaluate Activity Part 2 30 minutes	Eval

Option 3: Using only 5E Unit Plans Abbrevi

Day 1	Day 2	Day 3	D
Engage Activity Part 3 10 minutes	Explore Activity Part 3 10 minutes	Explain Activity Part 2 20 minutes	Exten P 20

Teaching Timeline Options

Natural Hazards

Option 4: Supplementing 5E Unit Plans with the Natural Hazards Science Stations as Whole Group Lessons

Day 1	Day 2	Day 3	Day 4	Day 5
5E Unit Plan Engage Activities 35 minutes	Natural Hazards Science Station MODEL None of the reading 30 minutes	5E Unit Plan Explore Activity Part 1 20 minutes Natural Hazards Science Station INVESTIGATE 20 minutes	5E Unit Plan Explore Activities Parts 2 & 3 25 minutes	5E Unit Plan Explain Activities Parts 1 & 2 40 minutes
Day 6	Day 7	Day 8	Day 9	Day 10
5E Unit Plan Explain Activity Part 3 15 minutes Natural Hazards DIAGRAM 25 minutes	5E Unit Plan Extend Activities Parts 1 & 2 30 minutes	5E Unit Plan Extend Activity Part 3 20 minutes Natural Hazards Science Station Station EXPLORE 20 minutes	Evaluate Activities Parts 1 & 2 45 minutes	Evaluate Activities Part 3 15 minutes Natural Hazards Science Station SORT 15 minutes

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1 Whole-Class 5E Unit

Teach one phase a day over 5 days as written, with 35 to 60 minutes per phase.

2 Shorter Time Blocks

Spread the unit across 9 days in shorter blocks when science minutes are limited.

3 Alongside Science Stations

Add the Natural Hazards Science Stations for a 10-day plan.

4 Formative Checks

Use the exit tickets throughout the unit and pair the performance activity with a final solution design.

TEACHING TIMELINE OPTIONS

Option 1 — 5 days
As Written

Day 1	Day 2	Day 3	Day 4	Day 5
Engage	**Explore**	**Explain**	**Extend**	**Evaluate**
35 min	45 min	55 min	55 min	60 min

Option 2 — 9 days
Shorter Time Blocks

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9
Engage	**Explore 3**	**Explore 1–2**	**Explain 1**	**Explain 2–3**	**Extend 1–2**	**Extend 3**	**Evaluate 2**	**Evaluate 1 & 3**
35 min	20 min	25 min	20 min	35 min	35 min	20 min	30 min	30 min

Option 3 — 5 days
Abbreviated

Day 1	Day 2	Day 3	Day 4	Day 5
Engage 3	**Explore 3**	**Explain 2**	**Extend 3**	**Evaluate 1**
10 min	10 min	20 min	20 min	15 min

Option 4 — 10 days
With Science Stations

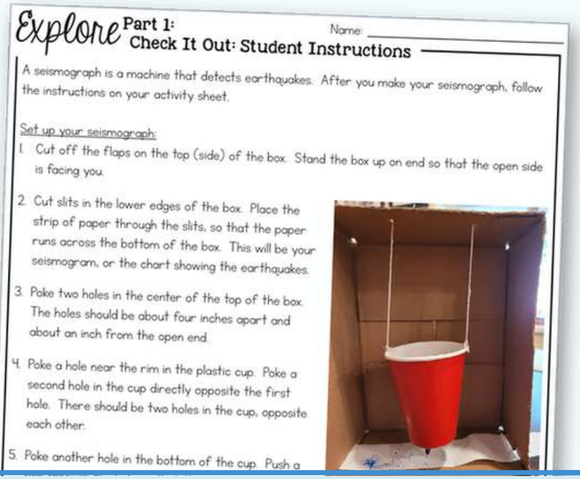
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Engage	**Hazards Station**	**Explore 1**	**Explore 2-3**	**Explain 1-2**	**Explain 3**	**Diagram**	**Extend 1-2**	**Extend 3**	**Evaluate 1-2**
35 min	30 min	20 min	25 min +20 station	40 min	15 min	25 min	30 min	20 min +20 station	45 min +15 station

Orange days are Science Station lessons. Magenta notes are extra station activities you can add that day.

YOU WILL LOVE THIS BECAUSE

Hands-On From Day One

Students build a seismograph, model flooding, and design ways to reduce the impact of natural hazards.


Explore Part 1: Check It Out: Student Instructions

Name: _____

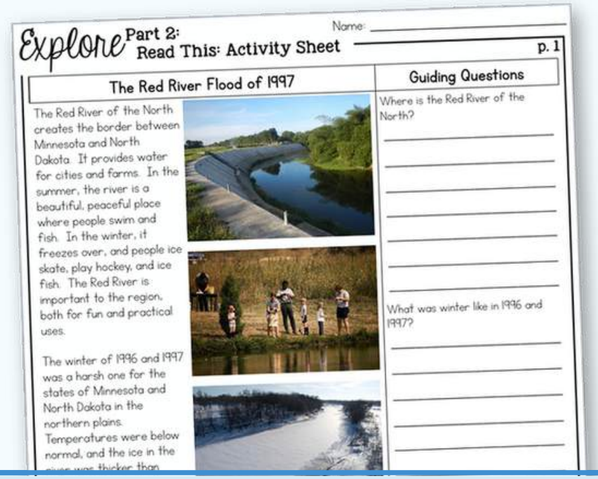
A seismograph is a machine that detects earthquakes. After you make your seismograph, follow the instructions on your activity sheet.

Set up your seismograph:

1. Cut off the flaps on the top (side) of the box. Stand the box up on end so that the open side is facing you.
2. Cut slits in the lower edges of the box. Place the strip of paper through the slits, so that the paper runs across the bottom of the box. This will be your seismogram, or the chart showing the earthquakes.
3. Poke two holes in the center of the top of the box. The holes should be about four inches apart and about an inch from the open end.
4. Poke a hole near the rim in the plastic cup. Poke a second hole in the cup directly opposite the first hole. There should be two holes in the cup, opposite each other.
5. Poke another hole in the bottom of the cup. Push a

Planned and Ready to Teach

Teacher notes, a misconceptions guide, a materials checklist, and answer keys are done for you.


Explore Part 2: Read This: Activity Sheet

Name: _____

p. 1

The Red River Flood of 1997

The Red River of the North creates the border between Minnesota and North Dakota. It provides water for cities and farms. In the summer, the river is a beautiful, peaceful place where people swim and fish. In the winter, it freezes over, and people ice skate, play hockey, and ice fish. The Red River is important to the region, both for fun and practical uses.

The winter of 1996 and 1997 was a harsh one for the states of Minnesota and North Dakota in the northern plains. Temperatures were below normal, and the ice in the

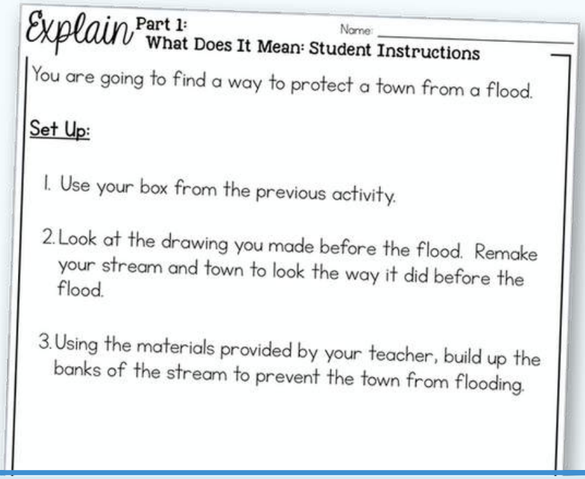
Guiding Questions

Where is the Red River of the North?

What was winter like in 1996 and 1997?

Fits Your Schedule

Choose from 4 timeline options, and use the Google Slides and Google Forms versions for a print or digital classroom.


Explain Part 1: What Does It Mean: Student Instructions

Name: _____

You are going to find a way to protect a town from a flood.

Set Up:

1. Use your box from the previous activity.
2. Look at the drawing you made before the flood. Remake your stream and town to look the way it did before the flood.
3. Using the materials provided by your teacher, build up the banks of the stream to prevent the town from flooding.

TEACHERS LOVE IT!

★★★★★

This was a great resource to add to our natural disasters unit. There were so many different ideas covered throughout the unit and the passages were interesting and engaging. The way that the questions are set up along the margin helps the students read with a purpose. It was easy to use both as a whole group lesson and independent/partner activity.

Tracy H.



★★★★★

I used pieces of this unit to create my own for my Teacher Work Sample. I found it very valuable and the students loved what I put together. Thank you!

Heather C.

★★★★★

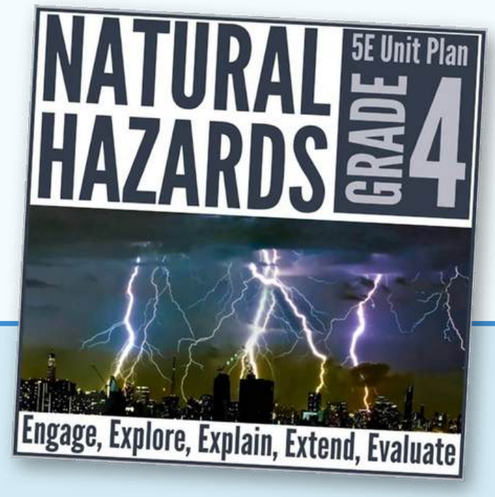
I love these units. I use this and some of the science stations and it is wonderful for my students.

Felicia C.



READY FOR YOUR CLASSROOM

- **Instant digital download**
- **Print and use the activities**
- **Google Slides and Forms versions**

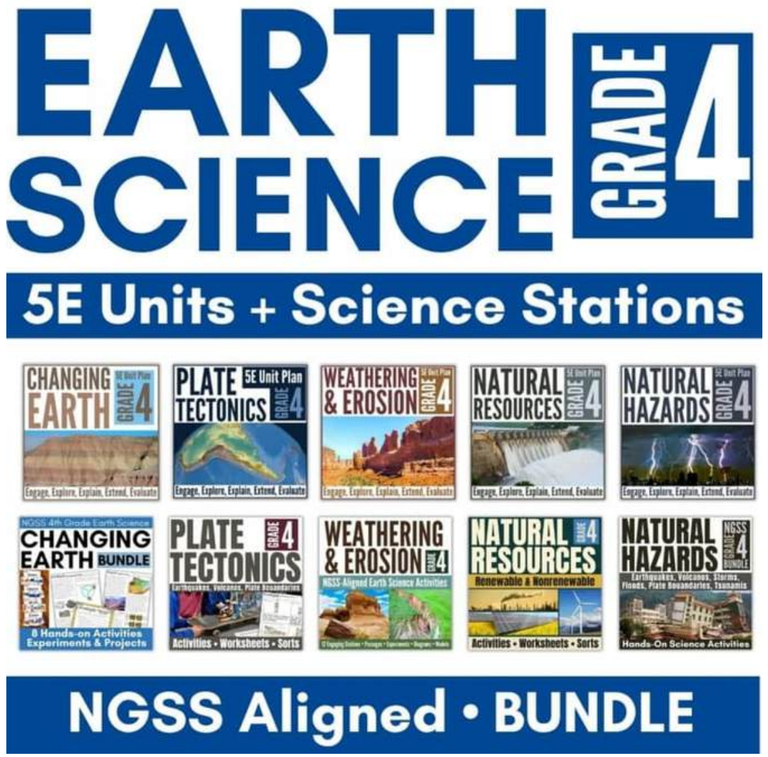


WANT MORE 4TH GRADE 5E UNITS?

Save with a topic bundle or the full-year bundle.

TOPIC BUNDLE

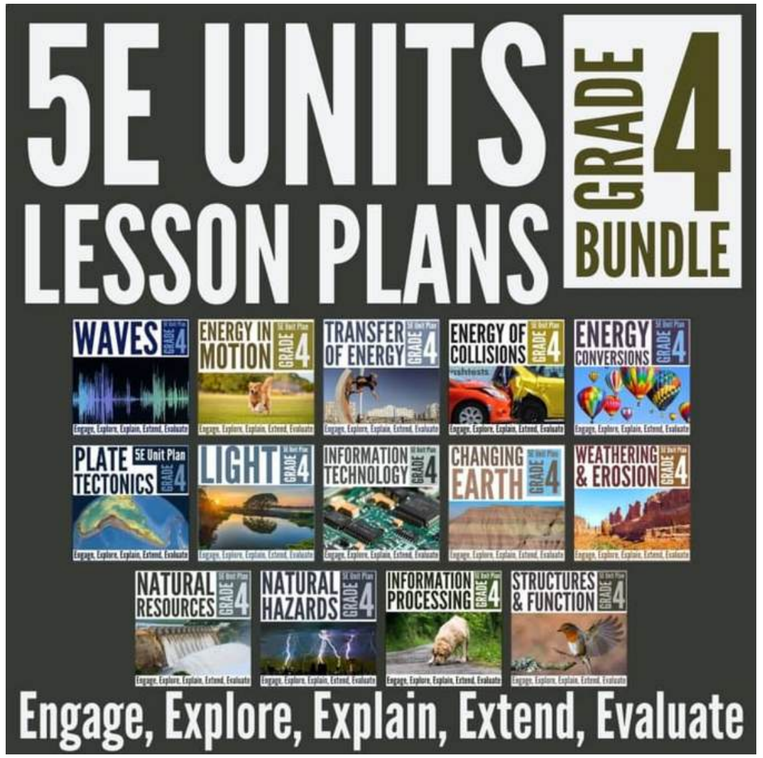
GOOD VALUE



SEE THE BUNDLE

FULL-YEAR BUNDLE

BEST VALUE



SEE THE BUNDLE

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