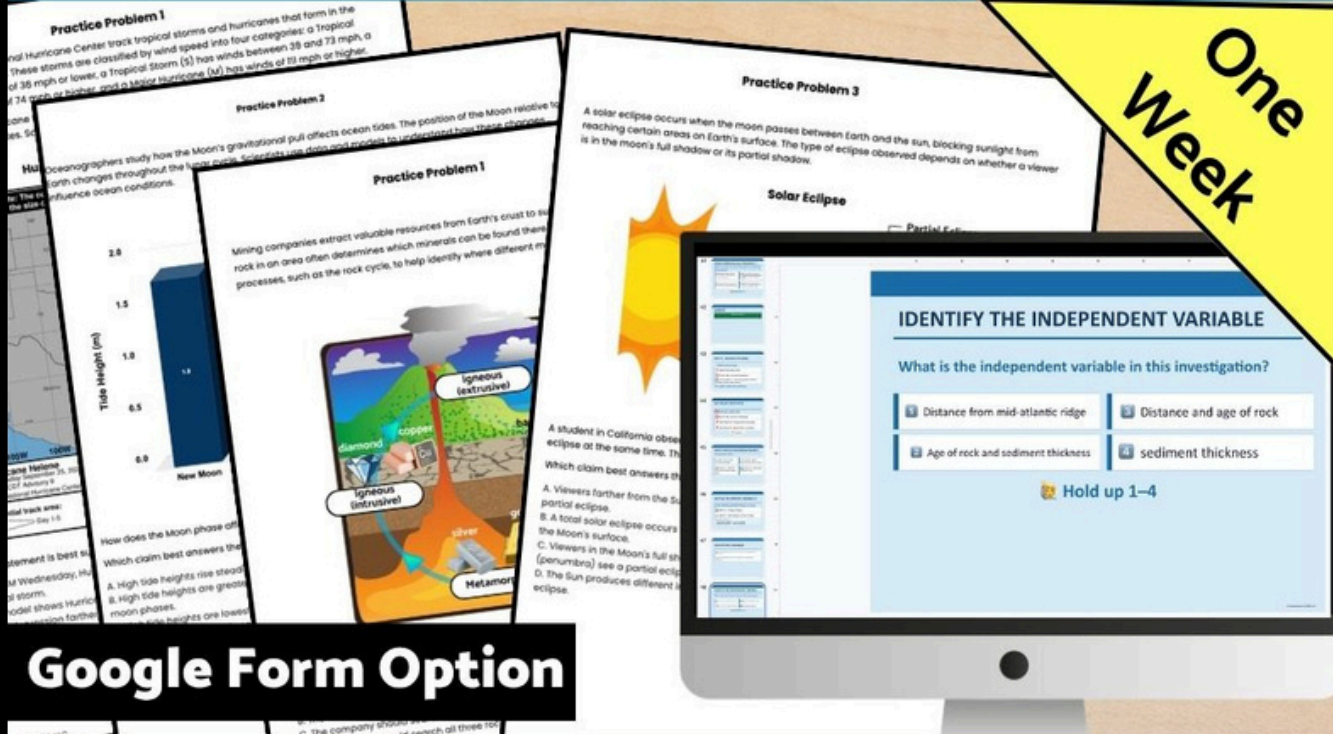


SCIENCE TEST PREP

Earth Science

NGSS Test Prep
Test-Taking Strategies



One Week

Google Form Option

20 NGSS Style Earth Science Practice Problems

Analyze Data • Models • Graphs

Scroll Through

To take a peek inside!

**Help students learn
the test taking
strategies they need
to pass the state
science test**

DO YOUR STUDENTS STRUGGLE WITH



Identifying what the prompt is asking



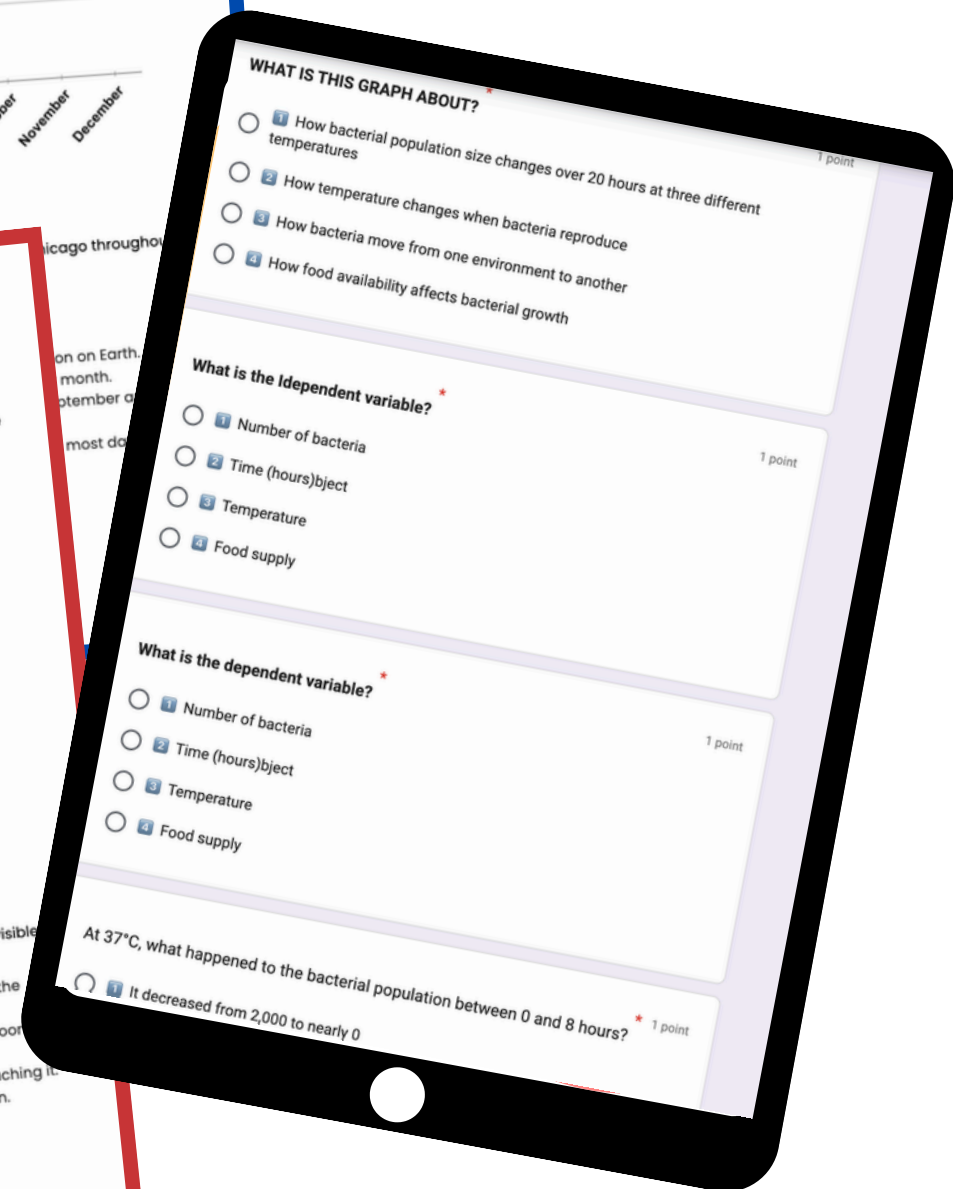
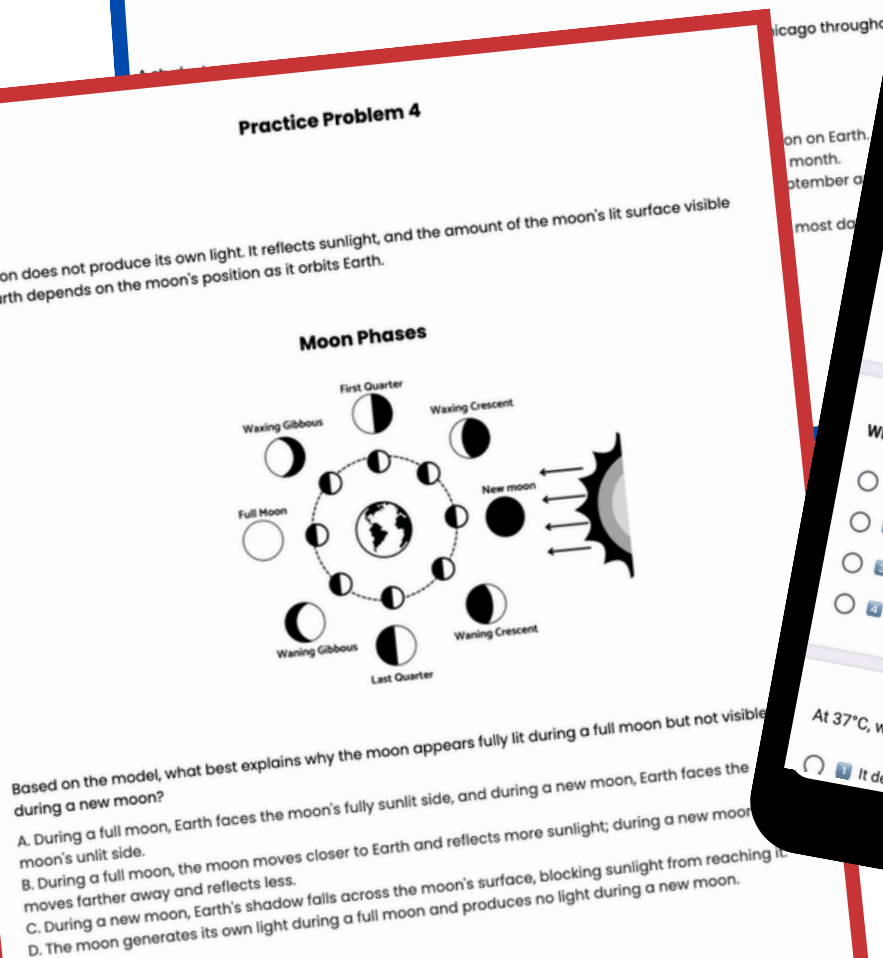
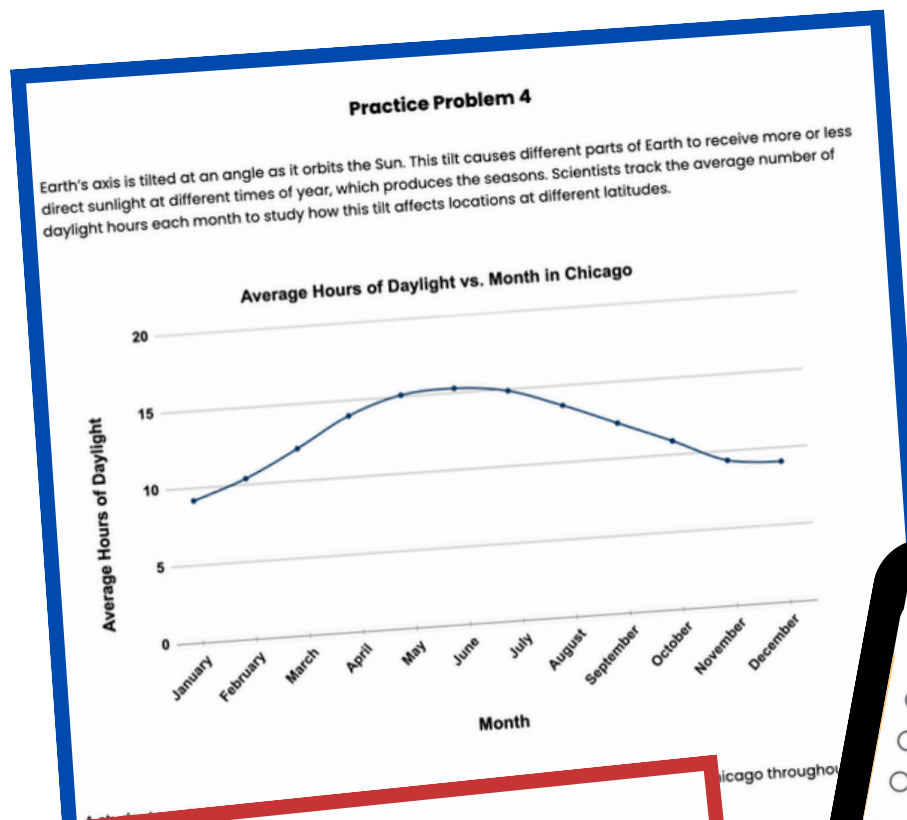
Finding the key details in passages



Analyzing graphs and data tables



Interpreting diagrams



I've Got You Covered

- ✓ 5 Days of strategies focusing on one key strategy a day
- ✓ Guided release moving from whole class to individual practice
- ✓ 4 NGSS-aligned practice problems a day (with a Google Form for the last practice problem)
- ✓ Explanation of the strategy and why it is important
- ✓ Identifying and understanding the prompt, reading and analyzing diagrams, graphs, and data tables



"This resource is exactly what I was looking for. Worth the purchase!" - Shannon

SCIENCE TEST PREP

Earth Science

Practice Problem 4

Engineers and energy scientists study how the United States generates electricity. Different energy sources have different environmental impacts. Fossil fuels such as coal and natural gas release carbon dioxide (CO₂) when burned. Renewable sources such as wind, solar, and hydropower do not produce CO₂ during electricity generation.

U.S. Electricity Generation by Energy Source

| Energy Source | Percentage |
|---------------|------------|
| Coal | 20.0% |
| Natural Gas | 39.0% |
| Nuclear | 19.0% |
| Wind | 10.0% |
| Hydropower | 7.0% |
| Solar | 4.0% |
| Other | 1.0% |

Engineers analyzing U.S. energy data make the following claim: In 2022, coal provided 20% of all electricity generated in the United States, while all renewable energy sources provided only one-quarter of the total.

Which evidence from the graph best supports this claim?

A. Nuclear energy provided 19% of U.S. electricity in 2022, making it the second largest energy source, supplying 39% of the total.

B. Natural gas was the single largest energy source, supplying 39% of the total, while all renewable energy sources combined provided only 21%.

C. Natural gas (39%) and coal (20%) together provided 59% of electricity, while all renewable energy sources (wind, hydropower, solar, and other) combined for only 21%.

D. Solar energy accounted for 4% of all electricity generated in the United States, while all other renewable energy sources combined for only 17%.

Practice Problem 1

Scientists use satellite data to track tropical storms and hurricanes that form in the Atlantic Ocean. Tropical storms are classified by wind speed into four categories: a Tropical Depression (TD) has winds of 39 mph or lower, a Tropical Storm (S) has winds between 39 and 73 mph, a Major Tropical Storm (MS) has winds between 74 and 110 mph, and a Major Hurricane (M) has winds of 111 mph or higher.

A tropical storm formed in the Gulf of Mexico and moved north toward the Atlantic Ocean. Scientists used forecast data to predict the storm's path and intensity over the next several days.

Helene: NHC Track Forecast Map

The probable path of the storm center but does not show hazardous conditions can occur outside of the cone.

Storm Information: X Position 21.6 N 86.3 W
Sustained winds 80 mph
NNW at 10 mph

Forecast positions:
● Tropical Cyclone
○ Post-Potential TC
Sustained winds: ○ < 39 mph
○ 39-73 mph ○ 74-110 mph ○ > 110 mph

Warnings:
■ Hurricane Warning
■ Tropical Storm Warning
■ Tropical Storm & Hurricane Warning

Current wind field estimate:
■ Hurricane
■ Tropical Storm

Scientists analyzing the storm's path and intensity data make the following claim: The storm weakened from a major hurricane near the coast to a tropical storm as it moved inland.

Which evidence from the map best supports this claim?

A. The storm's path shows it weakened from a major hurricane near the coast to a tropical storm as it moved inland.

B. The storm's path shows it strengthened from a tropical storm near the coast to a major hurricane as it moved inland.

C. The storm's path shows it weakened from a major hurricane near the coast to a tropical storm as it moved inland.

D. The storm's path shows it strengthened from a tropical storm near the coast to a major hurricane as it moved inland.

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What Are *students* Doing?

- ✓ **Marking the text**
- ✓ **Analyzing and interpreting data, graphs, and diagrams**
- ✓ **Identifying what the question is asking**
- ✓ **Identifying the correct answer to the question**

SCIENCE TEST PREP

Earth Science

Practice Problem 1

Scientists compare planets in our solar system by measuring their average surface temperatures. Surface temperature depends on several factors, including a planet's distance from the Sun and the composition of its atmosphere. Venus has a thick atmosphere made mostly of carbon dioxide, which traps heat through the greenhouse effect.

Average Surface Temperature (°C) vs. Planet

| Planet | Average Surface Temperature (°C) |
|---------|----------------------------------|
| Mercury | 167 |
| Venus | 464 |
| Earth | 15 |

A student claims that a planet's distance from the Sun is not the only factor that affects its surface temperature.

Which evidence from the graph best supports the student's claim?

A. Mercury is the closest planet to the Sun and has an average surface temperature of 167°C, which is higher than Earth's.

B. Venus has an average surface temperature of 464°C, which is higher than Earth's, though Venus is farther from the Sun.

C. Jupiter and Saturn both have average surface temperatures below 0°C, though they are farther from the Sun.

D. The graph shows surface temperature data for six planets in our solar system.

Practice Problem 3

Electricity generation data to make decisions about energy sources. Different amounts of carbon dioxide (CO₂), a greenhouse gas linked to global warming, are produced in the production and environmental impact.

Electricity Generation by Energy Source (2022)

| Energy Source | CO ₂ Emitted (lbs per MWh) | % of U.S. Electricity Generation (2022) | Renewable? |
|---------------|---------------------------------------|---|------------|
| Coal | 2,230 | 20% | No |
| Natural Gas | 820 | 39% | No |
| Nuclear | 12 | 19% | No |
| Wind | 0 | 10% | Yes |
| Solar | 24 | 7% | Yes |
| Hydropower | 0 | 4% | Yes |
| Other | varies | 1% | Mixed |

Renewable energy sources emit significantly less CO₂ per MWh than fossil fuels, though fossil fuels still account for a much larger share of U.S. electricity.

Which data table best supports the student's claim?

A. Coal emits 2,230 lbs of CO₂ per MWh, while natural gas emits 820 lbs per MWh, which is far less CO₂.

B. Natural gas emits 820 lbs of CO₂ per MWh and supplies 39% of U.S. electricity, placing it among the largest energy sources.

C. Wind, solar, and hydropower emit 0 lbs of CO₂ per MWh, which is higher than nuclear energy's 12 lbs per MWh, though they supply a smaller share of U.S. electricity.

D. Three of which are classified as renewable.

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Different ways to use the test prep lessons

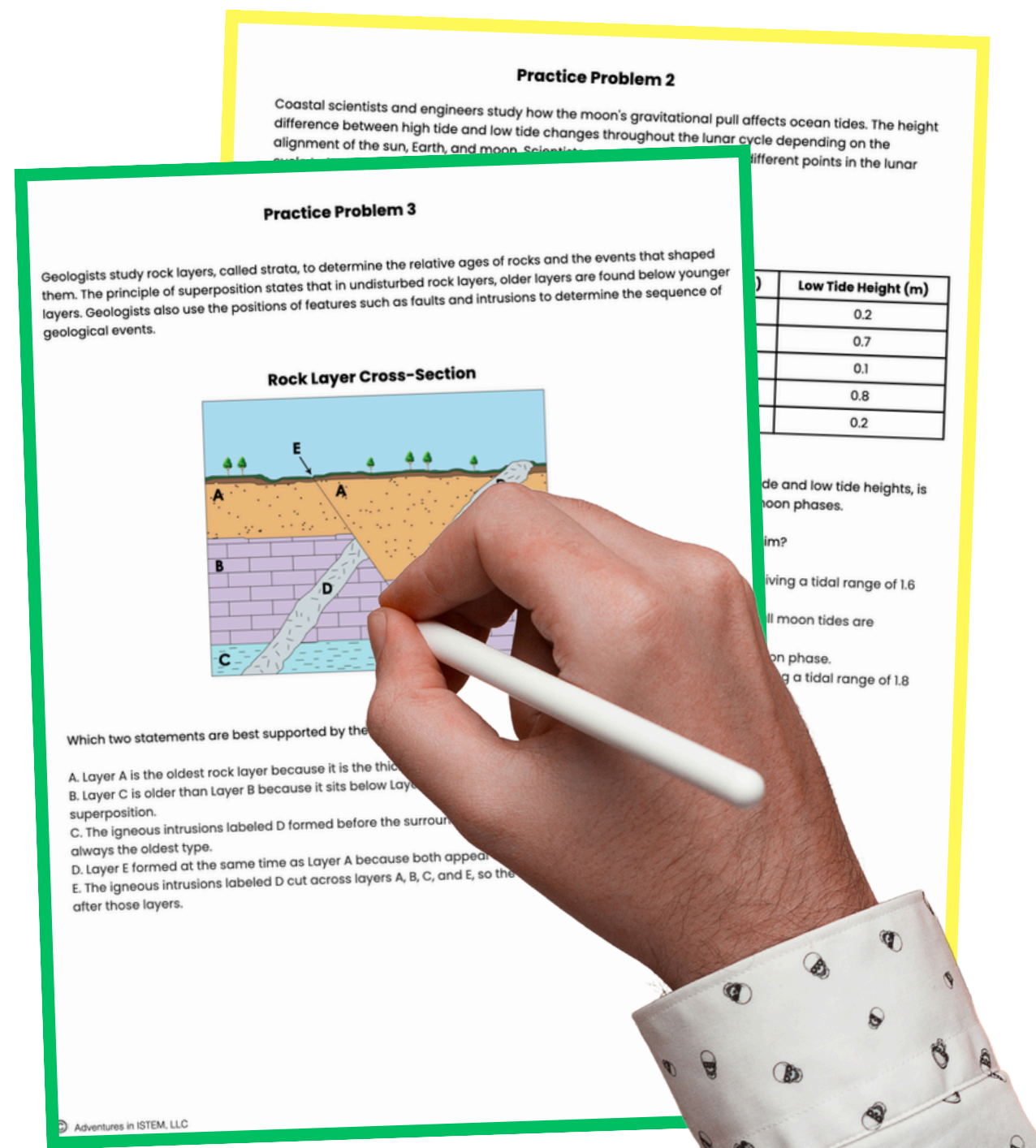
✓ **One strategy a day for one week of test prep**

✓ **Google Form Option for Problem 4: Individual practice for analytics**

✓ **One question a week, 5-10 minutes a day, focusing on one strategy a week**

SCIENCE TEST PREP

Test taking Strategies



Check out what teachers just like you have said about my other test prep activities:



This was a great resource to use to prep for our state science test! It really helps to be able to explain the purpose behind each strategy so that they are able to become better test takers. Thanks!- Leslie B



Worked well for what I needed with middle school students. Test prep is hard to come by. I used this to prepare them for Illinois State Testing prep. - Emily



This was an awesome resource! Thank you so much for putting your time into creating this to make life easier and more stress free! Used it with each bell-Thanks!-Trish Bruw and her Science Crew

Resource *includes*

- ✓ 20 practice problems with science passages, data and diagrams to interpret
- ✓ Google Form for each Problem 4 to see how well each student understands the strategy
- ✓ Teacher presentation to guide students step-by-step on how to break down the question, identify key parts, and then answer the questions
- ✓ Answer key

SCIENCE TEST PREP

Test taking Strategies



HOW TO USE THE RESOURCE IN

3 simple steps

1

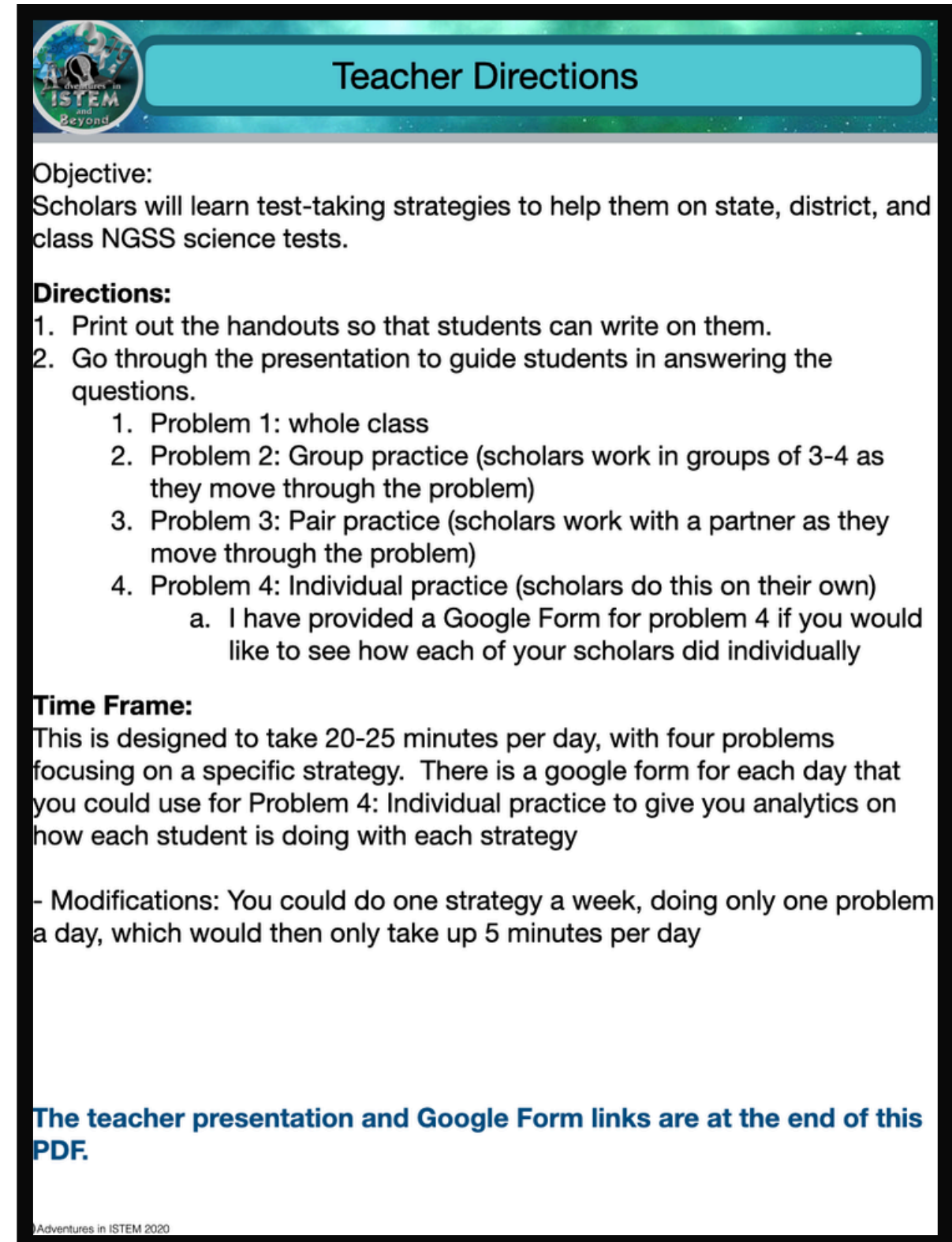
Print the PDF version, make copies, and hand out to students

2

Use the digital version by clicking the titles in the RED BOX to make your own copy (found at the end of the PDF)

3

Share the resource with your students using your favorite LMS (Google Classroom, Powerschool (schoolology), Canva...)



Teacher Directions

Objective:
Scholars will learn test-taking strategies to help them on state, district, and class NGSS science tests.

Directions:

1. Print out the handouts so that students can write on them.
2. Go through the presentation to guide students in answering the questions.
 1. Problem 1: whole class
 2. Problem 2: Group practice (scholars work in groups of 3-4 as they move through the problem)
 3. Problem 3: Pair practice (scholars work with a partner as they move through the problem)
 4. Problem 4: Individual practice (scholars do this on their own)
 - a. I have provided a Google Form for problem 4 if you would like to see how each of your scholars did individually

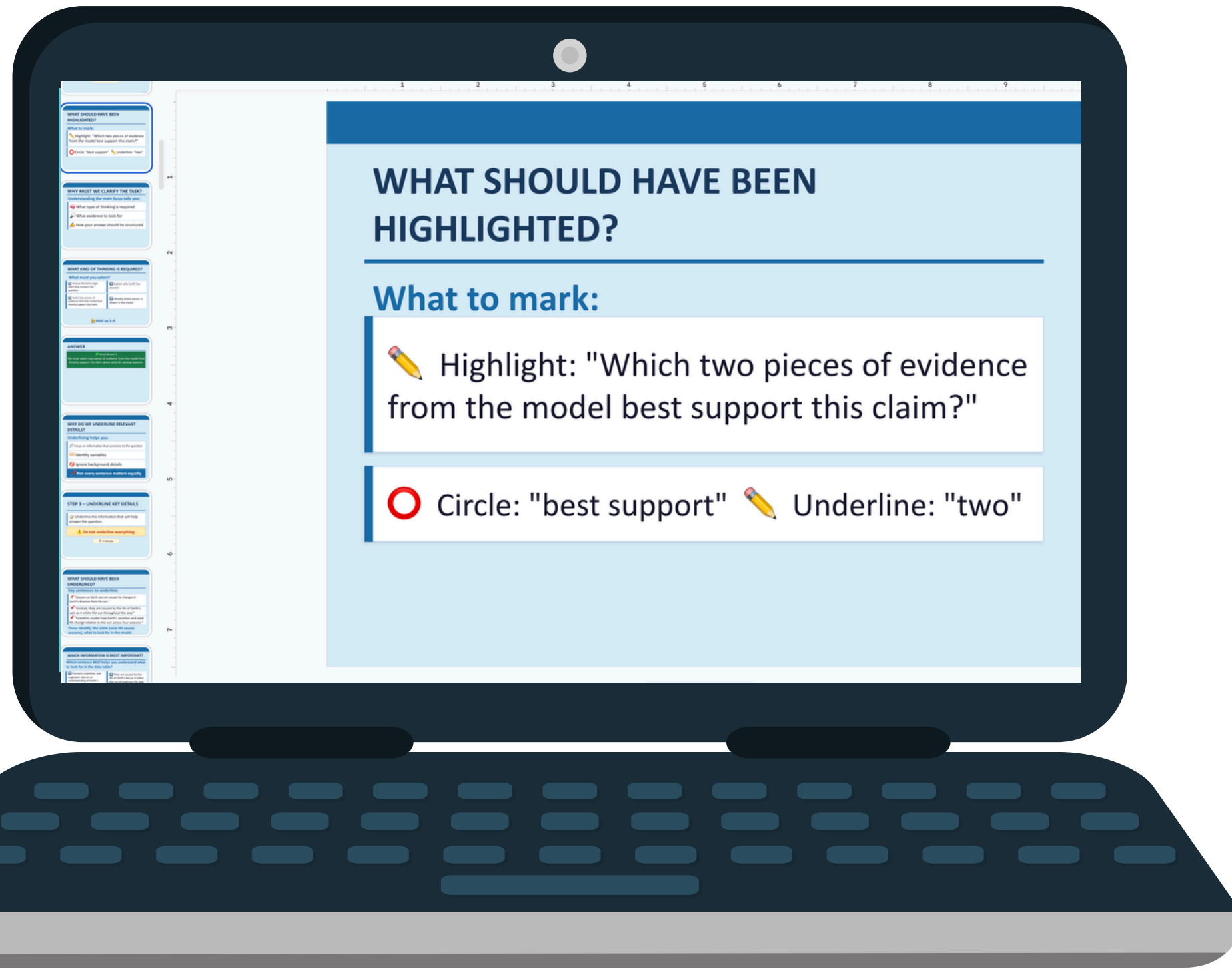
Time Frame:
This is designed to take 20-25 minutes per day, with four problems focusing on a specific strategy. There is a google form for each day that you could use for Problem 4: Individual practice to give you analytics on how each student is doing with each strategy

- Modifications: You could do one strategy a week, doing only one problem a day, which would then only take up 5 minutes per day

The teacher presentation and Google Form links are at the end of this PDF.

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