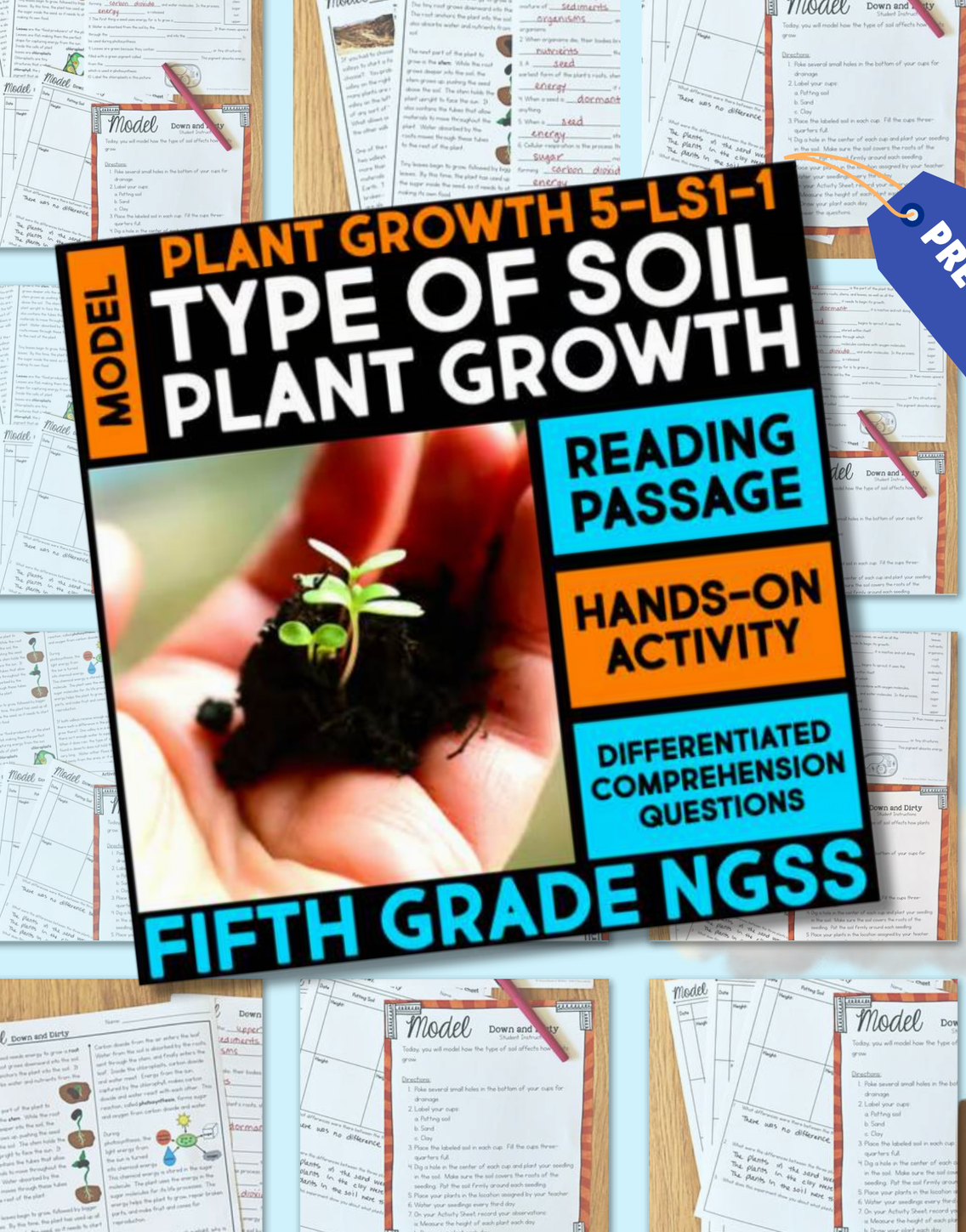


What Makes Plants Grow Best?

5TH GRADE

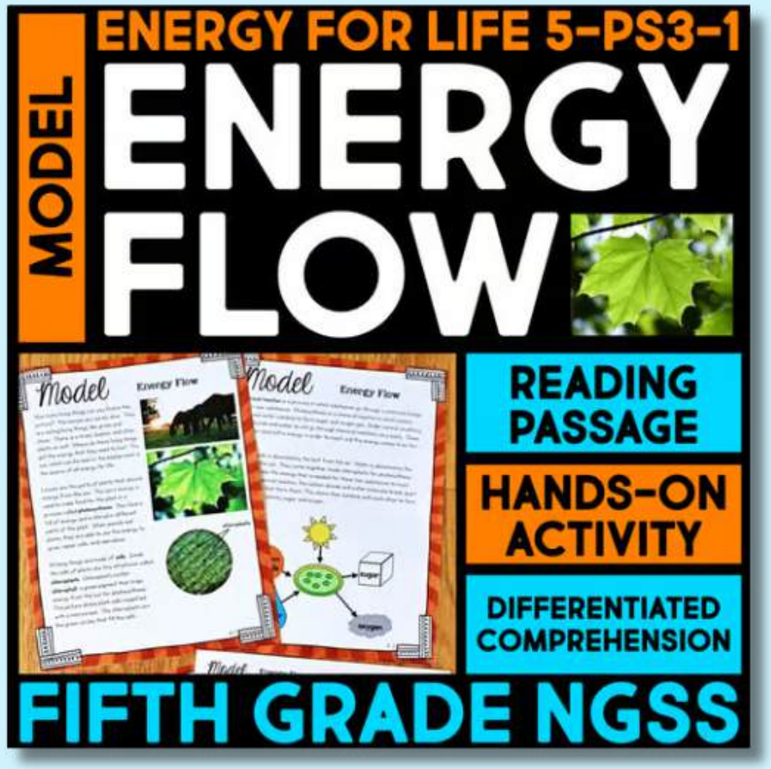
MODEL

TYPE OF SOIL PLANT GROWTH

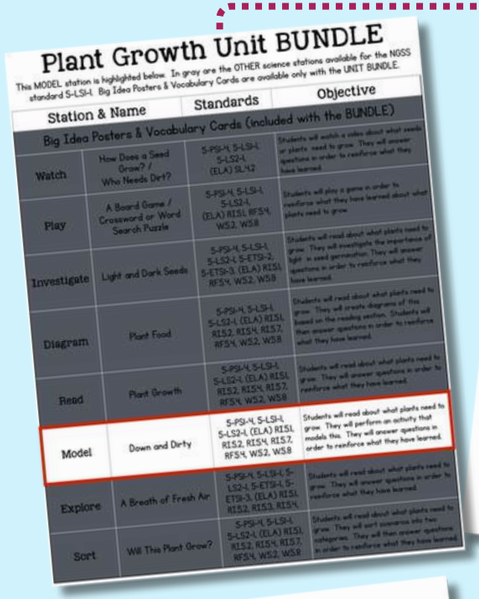
PLANT GROWTH

KEEP SCROLLING TO SEE WHAT'S INSIDE!

ACTIVITY OVERVIEW

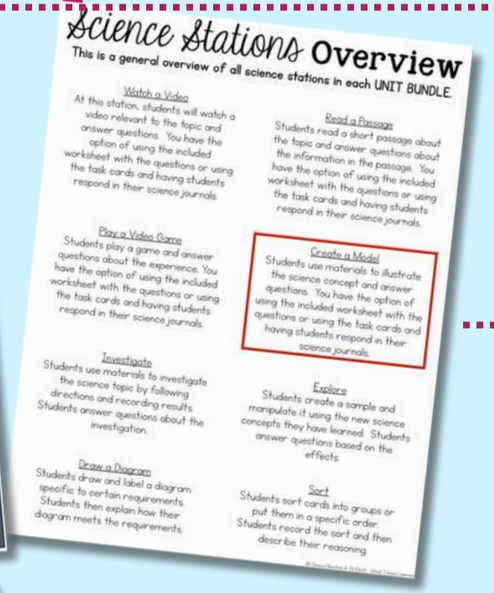


- Your students will read a passage.
- Then your students will create a model.
- Lastly, they will answer differentiated questions.


Plant Growth Unit BUNDLE

This MODEL station is highlighted below. In gray are the OTHER science stations available for the NGSS standard 5-LS1-1. Big Idea Posters & Vocabulary Cards are available only with the UNIT BUNDLE.

Station & Name		Standards	Objective
Big Idea Posters & Vocabulary Cards (included with the BUNDLE)			
Watch	How Does a Seed Grow? / Who Needs Dirt?	5-PS1-4, 5-LS1-1, 5-LS2-1, (ELA) SL.4.2	Students will watch a video about what seeds or plants need to grow. They will answer questions in order to reinforce what they have learned.
Play	A Board Game / Crossword or Word Search Puzzle	5-PS1-4, 5-LS1-1, 5-LS2-1, (ELA) RI.5.1, RF.5.4, W.5.2, W.5.8	Students will play a game in order to reinforce what they have learned about what plants need to grow.
Investigate	Light and Dark Seeds	5-PS1-4, 5-LS1-1, 5-LS2-1, 5-ETS1-2, 5-ETS1-3, (ELA) RI.5.1, RF.5.4, W.5.2, W.5.8	Students will read about what plants need to grow. They will investigate the importance of light in seed germination. They will answer questions in order to reinforce what they have learned.
Diagram	Plant Food	5-PS1-4, 5-LS1-1, 5-LS2-1, (ELA) RI.5.1, RI.5.2, RI.5.4, RI.5.7, RF.5.4, W.5.2, W.5.8	Students will read about what plants need to grow. They will create diagrams of this based on the reading section. Students will then answer questions in order to reinforce what they have learned.
Read	Plant Growth	5-PS1-4, 5-LS1-1, 5-LS2-1, (ELA) RI.5.1, RI.5.2, RI.5.4, RI.5.7, RF.5.4, W.5.2, W.5.8	Students will read about what plants need to grow. They will answer questions in order to reinforce what they have learned.
Model	Down and Dirty	5-PS1-4, 5-LS1-1, 5-LS2-1, (ELA) RI.5.1, RI.5.2, RI.5.4, RI.5.7, RF.5.4, W.5.2, W.5.8	Students will read about what plants need to grow. They will perform an activity that models this. They will answer questions in order to reinforce what they have learned.
Explore	A Breath of Fresh Air	5-PS1-4, 5-LS1-1, 5-LS2-1, 5-ETS1-1, 5-ETS1-3, (ELA) RI.5.1, RI.5.2, RI.5.3, RI.5.4,	Students will read about what plants need to grow. They will answer questions in order to reinforce what they have learned.
Sort	Will This Plant Grow?	5-PS1-4, 5-LS1-1, 5-LS2-1, (ELA) RI.5.1, RI.5.2, RI.5.4, RI.5.7, RF.5.4, W.5.2, W.5.8	Students will read about what plants need to grow. They will sort scenarios into two categories. They will then answer questions in order to reinforce what they have learned.


Science Stations Overview

This is a general overview of all science stations in each UNIT BUNDLE.

Watch a Video
At this station, students will watch a video relevant to the topic and answer questions. You have the option of using the included worksheet with the questions or using the task cards and having students respond in their science journals.

Read a Passage
Students read a short passage about the topic and answer questions about the information in the passage. You have the option of using the included worksheet with the questions or using the task cards and having students respond in their science journals.

Play a Video Game
Students play a game and answer questions about the experience. You have the option of using the included worksheet with the questions or using the task cards and having students respond in their science journals.

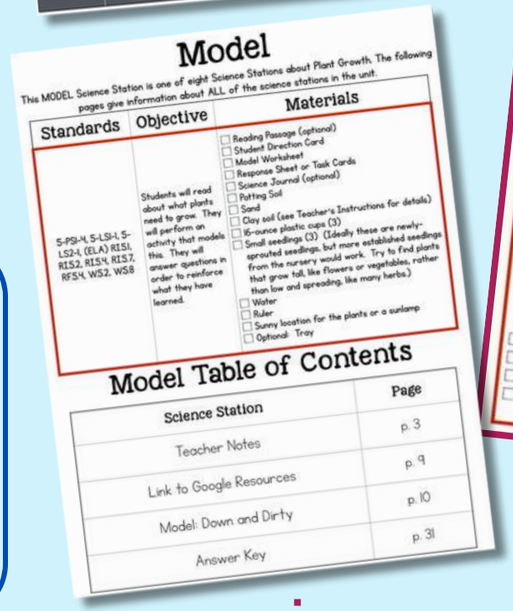
Create a Model
Students use materials to illustrate the science concept and answer questions. You have the option of using the included worksheet with the questions or using the task cards and having students respond in their science journals.

Investigate
Students use materials to investigate the science topic by following directions and recording results. Students answer questions about the investigation.

Explore
Students create a sample and manipulate it using the new science concepts they have learned. Students answer questions based on the effects.

Draw a Diagram
Students draw and label a diagram specific to certain requirements. Students then explain how their diagram meets the requirements.

Sort
Students sort cards into groups or put them in a specific order. Students record the sort and then describe their reasoning.

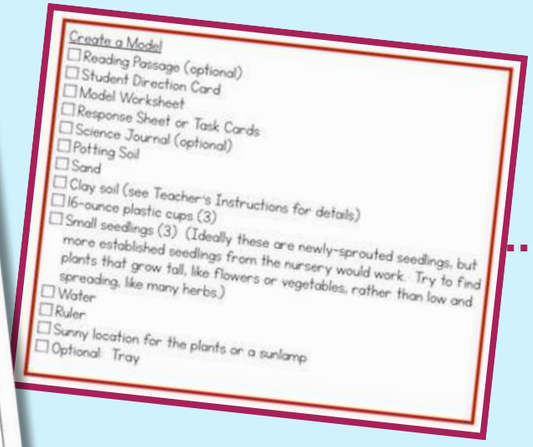

Model

This MODEL Science Station is one of eight Science Stations about Plant Growth. The following pages give information about ALL of the science stations in the unit.

Standards	Objective	Materials
5-PS1-4, 5-LS1-1, 5-LS2-1, (ELA) RI.5.1, RI.5.2, RI.5.4, RI.5.7, RF.5.4, W.5.2, W.5.8	Students will read about what plants need to grow. They will perform an activity that models this. They will answer questions in order to reinforce what they have learned.	☐ Reading Passage (optional) ☐ Student Direction Card ☐ Model Worksheet ☐ Response Sheet or Task Cards ☐ Science Journal (optional) ☐ Potting Soil ☐ Sand ☐ Clay soil (see Teacher's Instructions for details) ☐ 16-ounce plastic cups (3) ☐ Small seedlings (3) (Ideally these are newly-sprouted seedlings, but more established seedlings from the nursery would work. Try to find plants that grow tall, like flowers or vegetables, rather than low and spreading, like many herbs.) ☐ Water ☐ Ruler ☐ Sunny location for the plants or a sunlamp ☐ Optional: Tray

Model Table of Contents

Science Station	Page
Teacher Notes	p. 3
Link to Google Resources	p. 9
Model: Down and Dirty	p. 10
Answer Key	p. 31


Create a Model

- ☐ Reading Passage (optional)
- ☐ Student Direction Card
- ☐ Model Worksheet
- ☐ Response Sheet or Task Cards
- ☐ Science Journal (optional)
- ☐ Potting Soil
- ☐ Sand
- ☐ Clay soil (see Teacher's Instructions for details)
- ☐ 16-ounce plastic cups (3)
- ☐ Small seedlings (3) (Ideally these are newly-sprouted seedlings, but more established seedlings from the nursery would work. Try to find plants that grow tall, like flowers or vegetables, rather than low and spreading, like many herbs.)
- ☐ Water
- ☐ Ruler
- ☐ Sunny location for the plants or a sunlamp
- ☐ Optional: Tray

Table of Contents

Science Station Overview

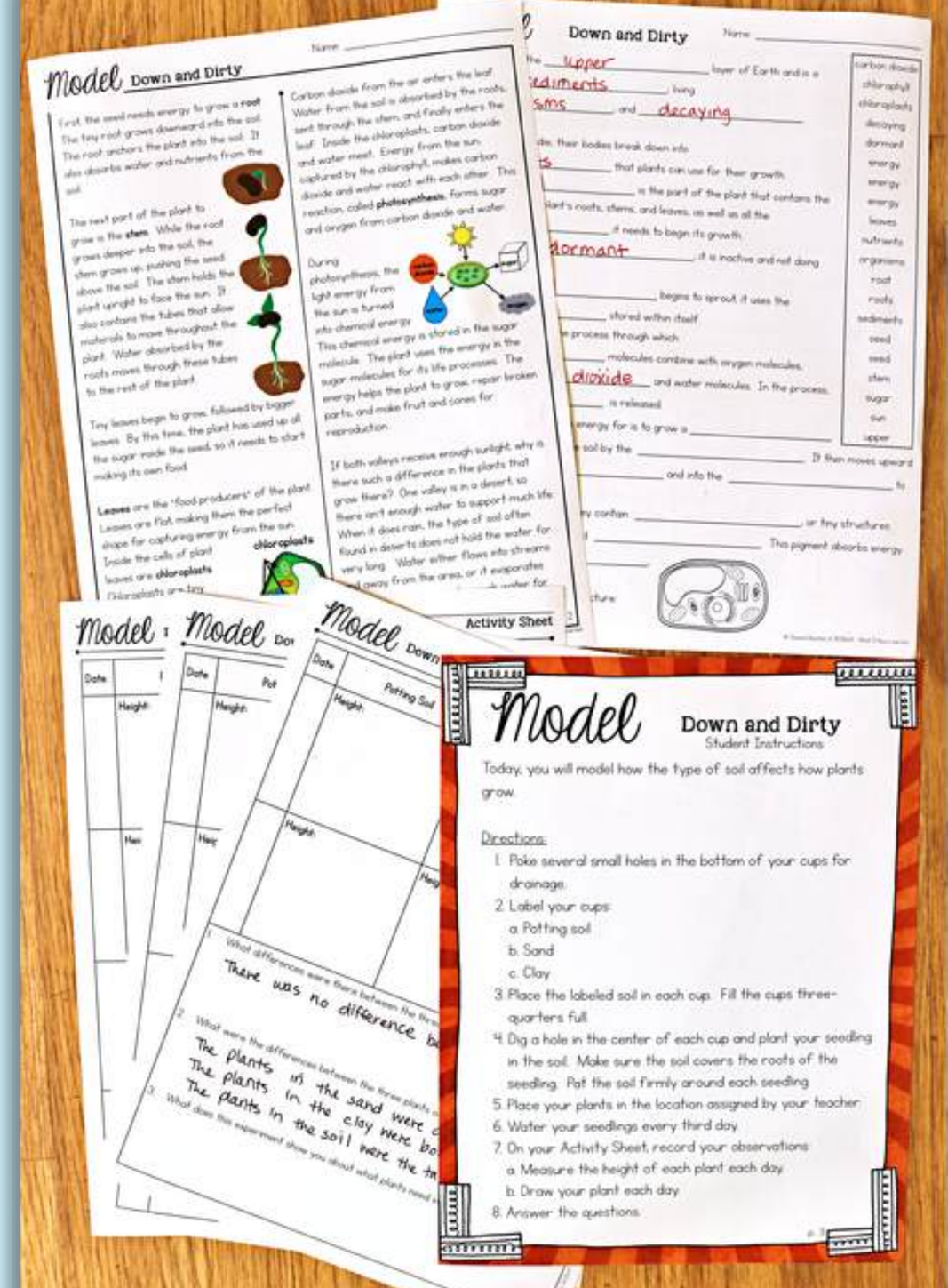
Materials Checklist

Table of Contents / Teacher's Notes

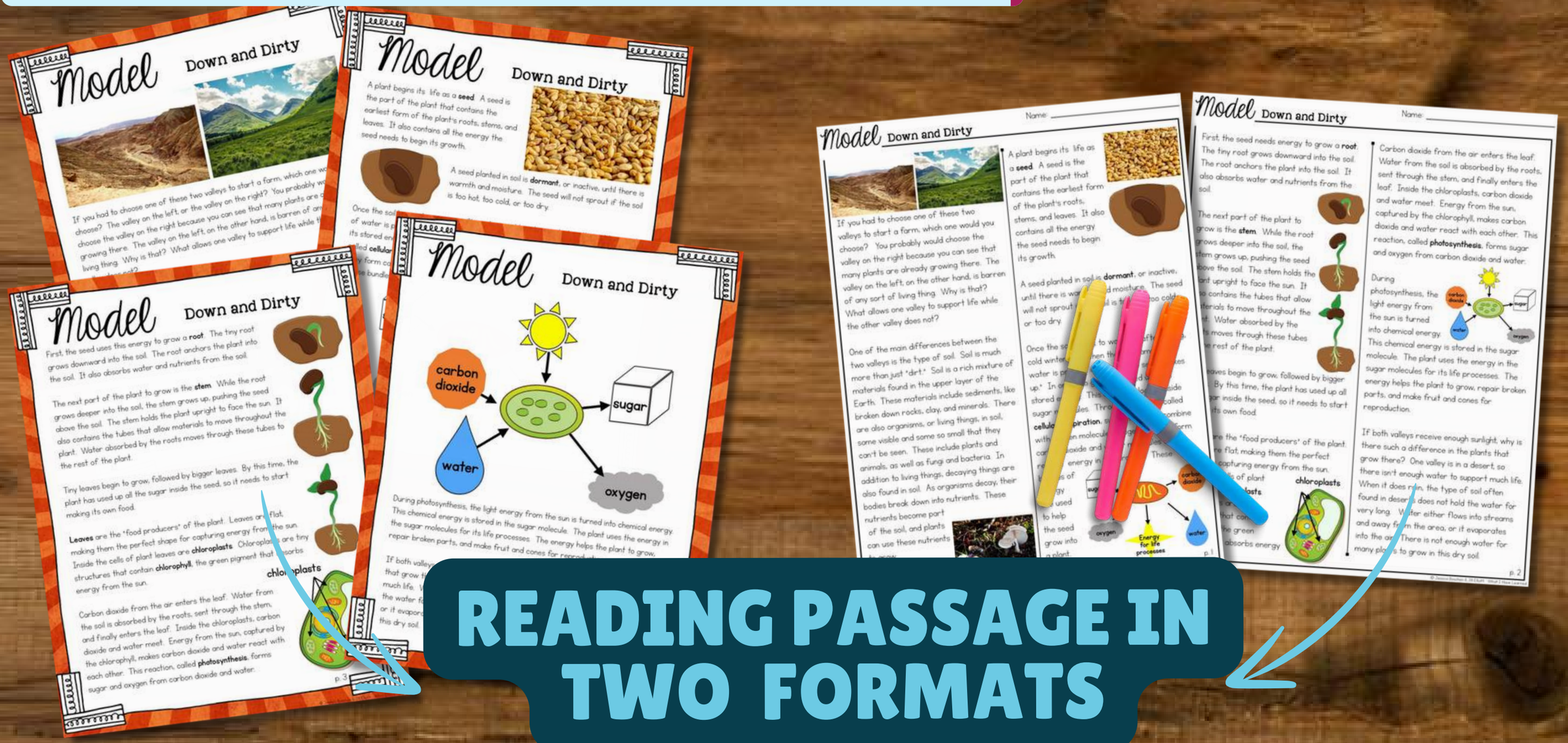
WHAT'S INCLUDED
MODEL SCIENCE STATION

- Teacher Notes
- **Student Text** in two formats
- Student **Instructions**
- **Activity Sheets** for observation
- Differentiated **Questions**
- Answer Key
- Google Form
- Google Slides

ADD TO CART



MODEL: READING PASSAGE



READING PASSAGE IN TWO FORMATS

Model — Down and Dirty

Student Instructions

Today, you will model how the type of soil affects how plants grow.

Directions:

1. Poke several small holes in the bottom of your cups for drainage.
2. Label your cups:
   a. Potting soil
   b. Sand
   c. Clay
3. Place the labeled soil in each cup. Fill the cups three-quarters full.
4. Dig a hole in the center of each cup and plant your seedling in the soil. Make sure the soil covers the roots of the seedling. Pat the soil firmly around each seedling.
5. Place your plants in the location assigned by your teacher.
6. Water your seedlings every third day.
7. On your Activity Sheet, record your observations:
   a. Measure the height of each plant each day.
   b. Draw your plant each day.
8. Answer the questions.

Model — Down and Dirty

Name: Sam S.

Date: April 15

Activity Sheet

Date	Potting Soil	Sand	Clay
Day 1 & Day 2	Height: 15 cm	Height:	Height:
Dat		Sand	
		Height:	Height:

1. What differences were there between the three plants on the first day?

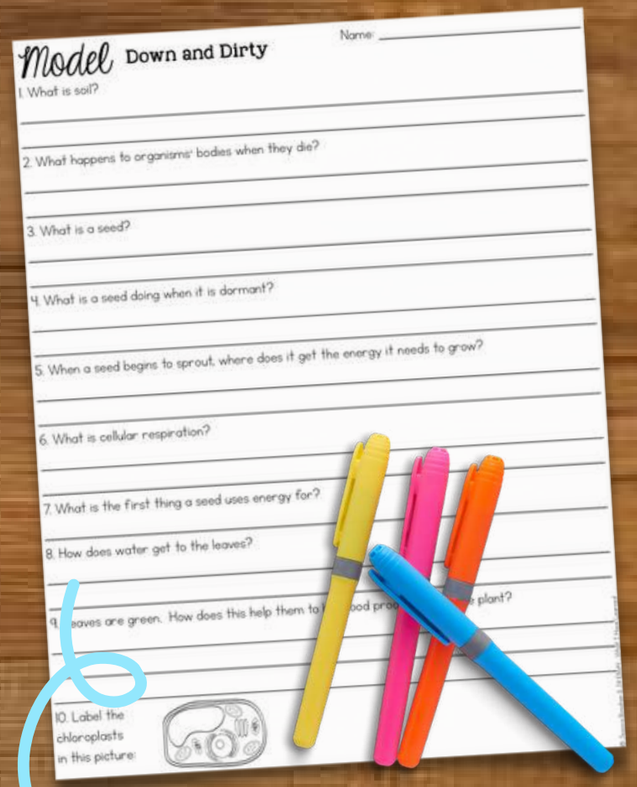
   The potting soil plant was slightly taller.

2. The potting soil plant is largest, sand plant is small and yellowing, clay plant is medium and struggling.

3. What does this experiment show you about plants need in order to grow?

   It shows plants need nutrient-rich, well-draining
   l like potting soil.

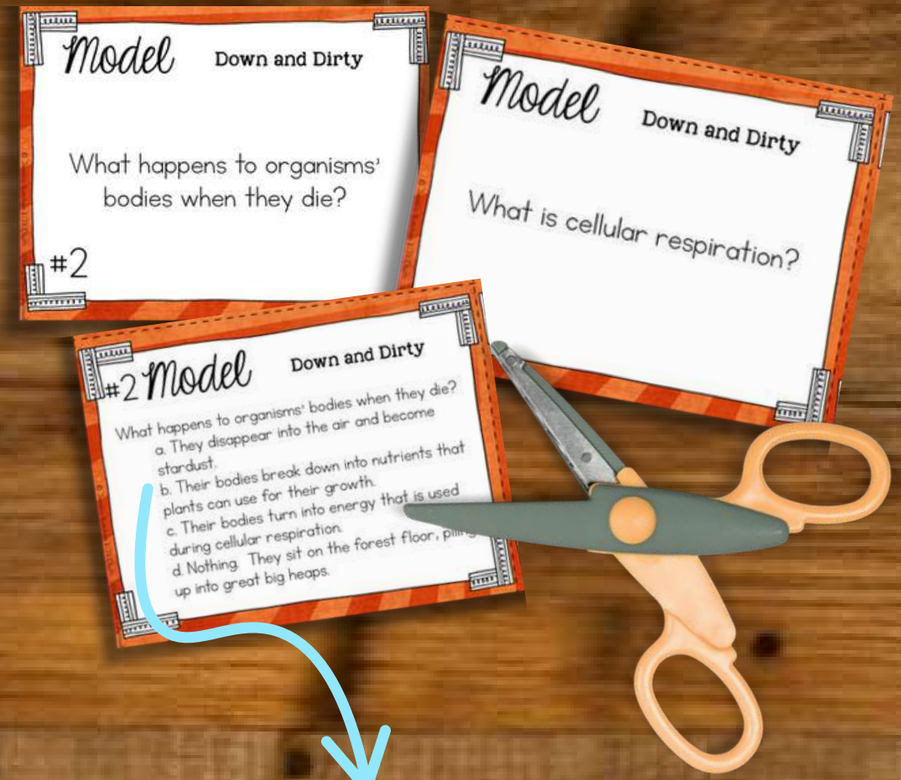
DIFFERENTIATED QUESTIONS



SHORT ANSWER



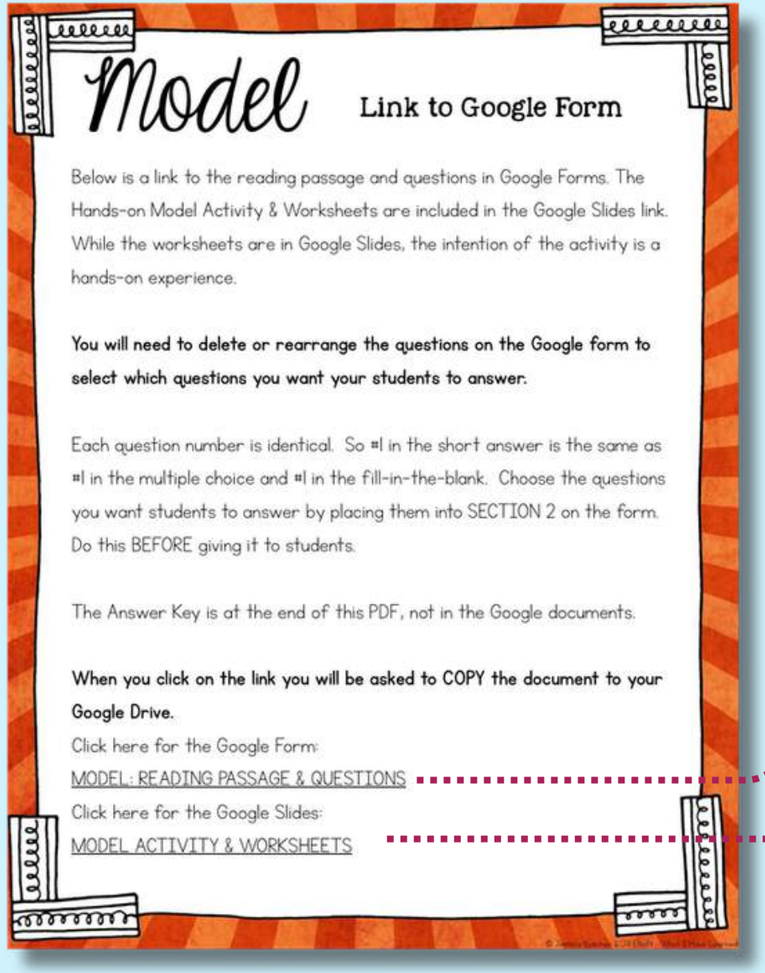
FILL-IN-THE BLANK

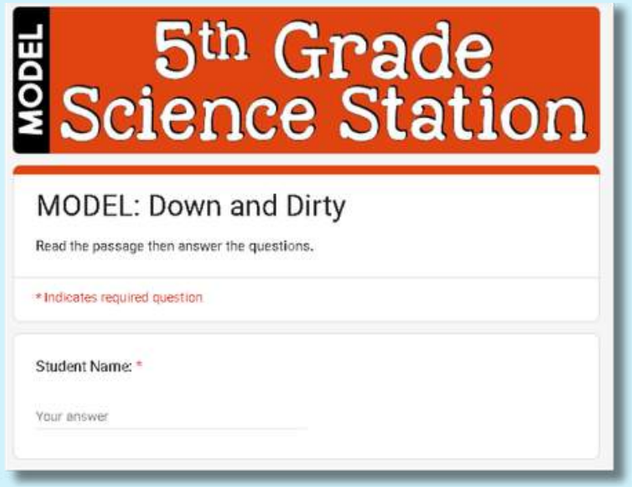


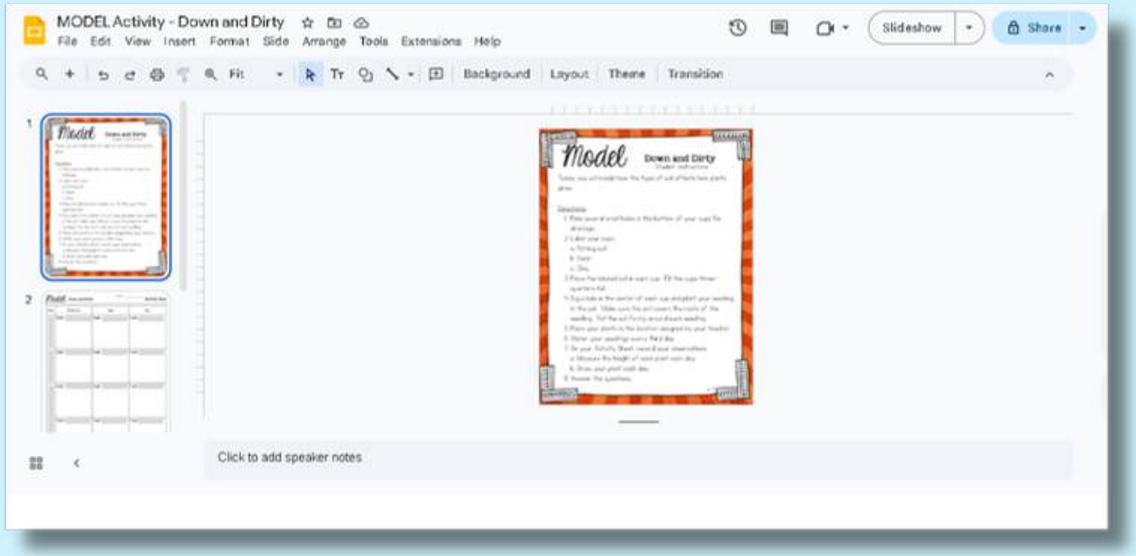
TASK CARDS: SHORT ANSWER & MULTIPLE CHOICE


Model
Down and Dirty
A plant begins its life as a seed. A seed is the part of the plant that contains the earliest form of the plant's roots, stems, and leaves. It also contains all the energy the seed needs to begin its growth.
A seed planted in soil is dormant, or inactive, until there is warmth and moisture. The seed will not sprout if the soil is too hot, too cold, or too dry.
Once the soil begins to warm up after a long, cold winter, and when there of water is present in the soil, the seed "wakes up." In order to grow its stored energy. This energy is locked inside sugar molecules. called cellular respiration, sugar molecules combine with oxygen they form carbon dioxide and water molecules and release These bundles of energy are used to help the seed grow into
sugar
oxygen
Model
Down and Dirty
First, the seed uses this energy to grow a root. The tiny root grows downward into the soil. The root anchors the plant into the soil. It also absorbs water and nutrients from the soil.
The next part of the plant to grow is the stem. While the root grows deeper into the soil, the stem grows up, pushing the seed above the soil. The stem holds the plant upright to face the sun. It also contains the tubes that allow materials to move throughout the plant. Water absorbed by the roots moves through these tubes to the rest of the plant.
Tiny leaves begin to grow, followed by bigger leaves. By this time, the plant has used up all the sugar inside the seed, so it needs to start making its own food.
Leaves are the "food producers" of the plant. Leaves are flat, making them the perfect shape for capturing energy from the sun. Inside the cells of plant leaves are chloroplasts. Chloroplasts are tiny structures that contain chlorophyll, the green pigment that absorbs energy from the sun.
chloroplasts
Carbon dioxide from the air enters the leaf. Water from the soil is absorbed by the roots, sent through the stem, and finally enters the leaf. Inside the chloroplasts, carbon dioxide and water meet. Energy from the sun, captured by the chlorophyll, makes carbon dioxide and water react with each other. This reaction, called photosynthesis, forms sugar and oxygen from carbon dioxide and water.
p. 3
Model
Down and Dirty
Name:
1. Soil is found in the sediments upper layer of Earth and is a mixture of decaying, living organisms, and organisms.
2. When organisms die, their bodies break down into nutrients that plants can use for their growth.
3. A seed is the part of the plant that contains the earliest form of the plant's roots, stems, and leaves, as well as all the energy it needs to begin its growth.
4. When a seed is dormant, it is not doing anything.
When a seed begins to
energy stored within itself.
ular respiration is the process through which
les combine with oxygen molecules, forming
molecules. In the process,
irst thing a seed uses energy for is to grow
is absorbed from the soil by the
ward through the stem
leaves
re green because
filled with a green
orbs energy fro
is.
chloroplasts in
Model
Down and Dirty
Leaves are green. How does this help them to be "food producers" of the plant?
#9
#10 Model
Down and Dirty
Which arrow is pointing to a chloroplast?
A
B
C

DIGITAL VERSIONS





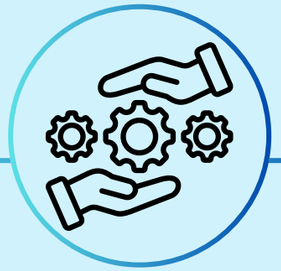


DIGITAL VERSIONS

- ✔ Google Sheet with Activity & Directions
- ✔ Google Form with Reading & Questions

Answer keys provided

YOU WILL LOVE THIS BECAUSE



Hands-On and Memorable Learning

Students actively model energy flow, making abstract ideas like plant growth easier to understand.



Differentiated for All Learners

Multiple question formats allow teachers to easily adjust the activity for different ability levels and learning styles.



Teacher-Friendly Design

Includes notes, answer keys, and ready-to-use activities that reduce prep time while ensuring standards-based, engaging science instruction.

TEACHERS LOVE IT!

My students enjoyed using this resource for science stations.

Mary W.

Very visual resource - students loved it and were very engaged

pimeks P.





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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