

GRADE 5

Patterns of Earth and Sky

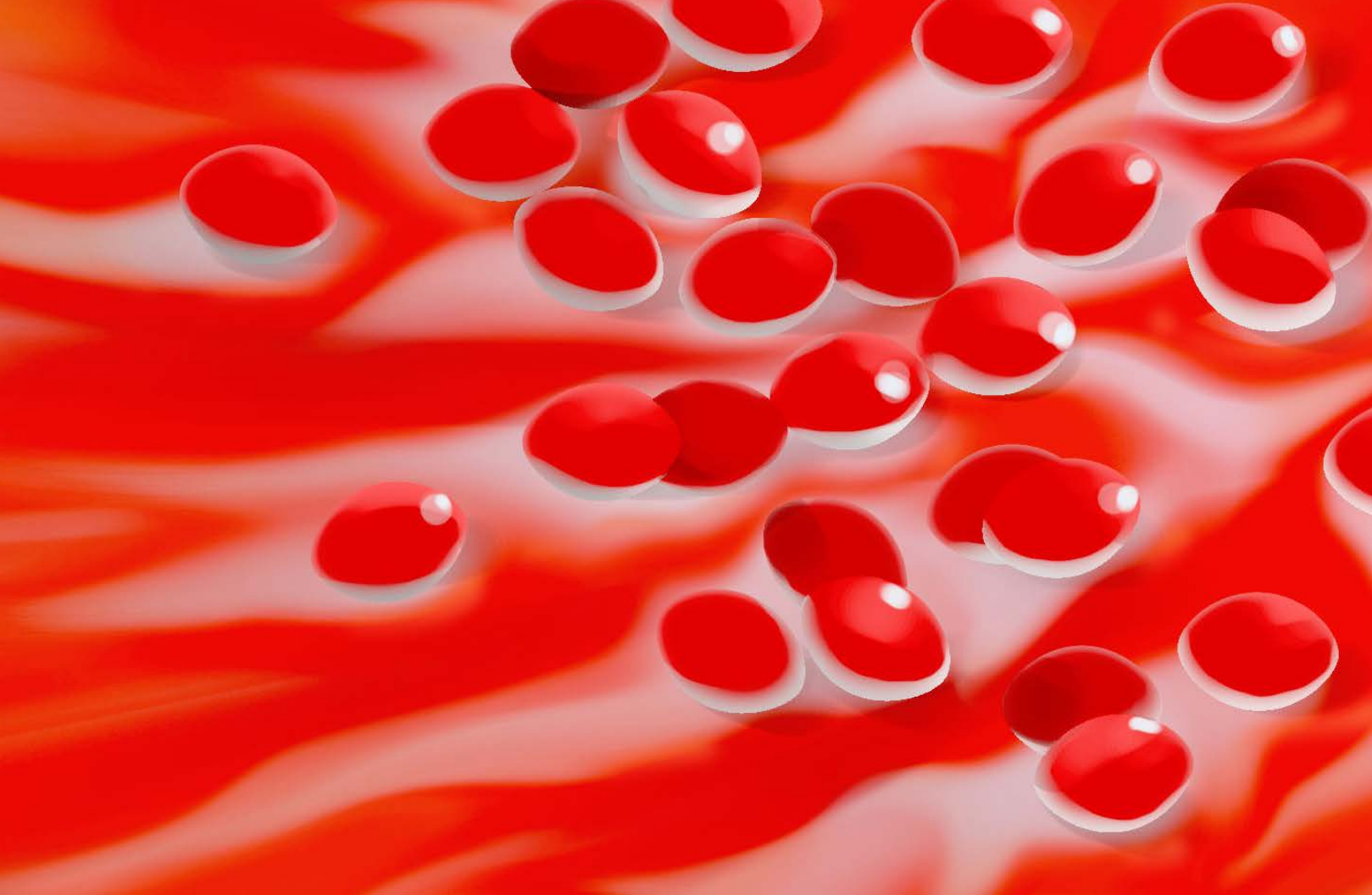
Unit storyline

Taking on the roles of astronomers, students help a team of archaeologists at the fictional Museum of Archaeology figure out what the missing piece of a recently discovered artifact might have depicted. As they learn about the sun and other stars and the movement of Earth, students can explain what is shown on the artifact and what might be on the missing piece.

Featured activity: Spinning Globes (Lesson 2.5)

In Lesson 2.5 of *Patterns of Earth and Sky*, students engage with a kinesthetic model to show their ideas about the directions up and down at various points on Earth as it spins. Groups of students use globes in a kinesthetic model that allows them to consider what people at various points on Earth see in the sky as up as the Earth spins.





GRADE 5

Modeling Matter

Unit storyline

In the roles of food scientists working for Good Food Production, Inc., students are introduced to the ideas that all matter is made of particles too small to see and that each different substance is made of particles (molecules) that are unique. Students are then challenged to solve two problems: One problem requires them to separate a mixture, and the other problem requires them to make unmixable substances mix. Students are challenged to use the particulate model of matter to explain their work to the president of the company. In so doing, students figure out that the properties of materials are related to the properties of the nanoparticles that make up those materials.

Featured activity: Food Mixture Investigations (Lesson 1.2)

In Lesson 1.2 of *Modeling Matter*, students launch into the unit and their roles as food scientists working in the research lab at Good Food Production, Inc. Students learn that many foods are mixtures and practice their scientific-observation skills as they describe properties and perform simple tests on food mixtures. Student engage in scientific practices and consider ideas about mixtures at an observable scale that they can later apply to thinking about ideas in the nanoscale.





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The Earth System

Unit storyline

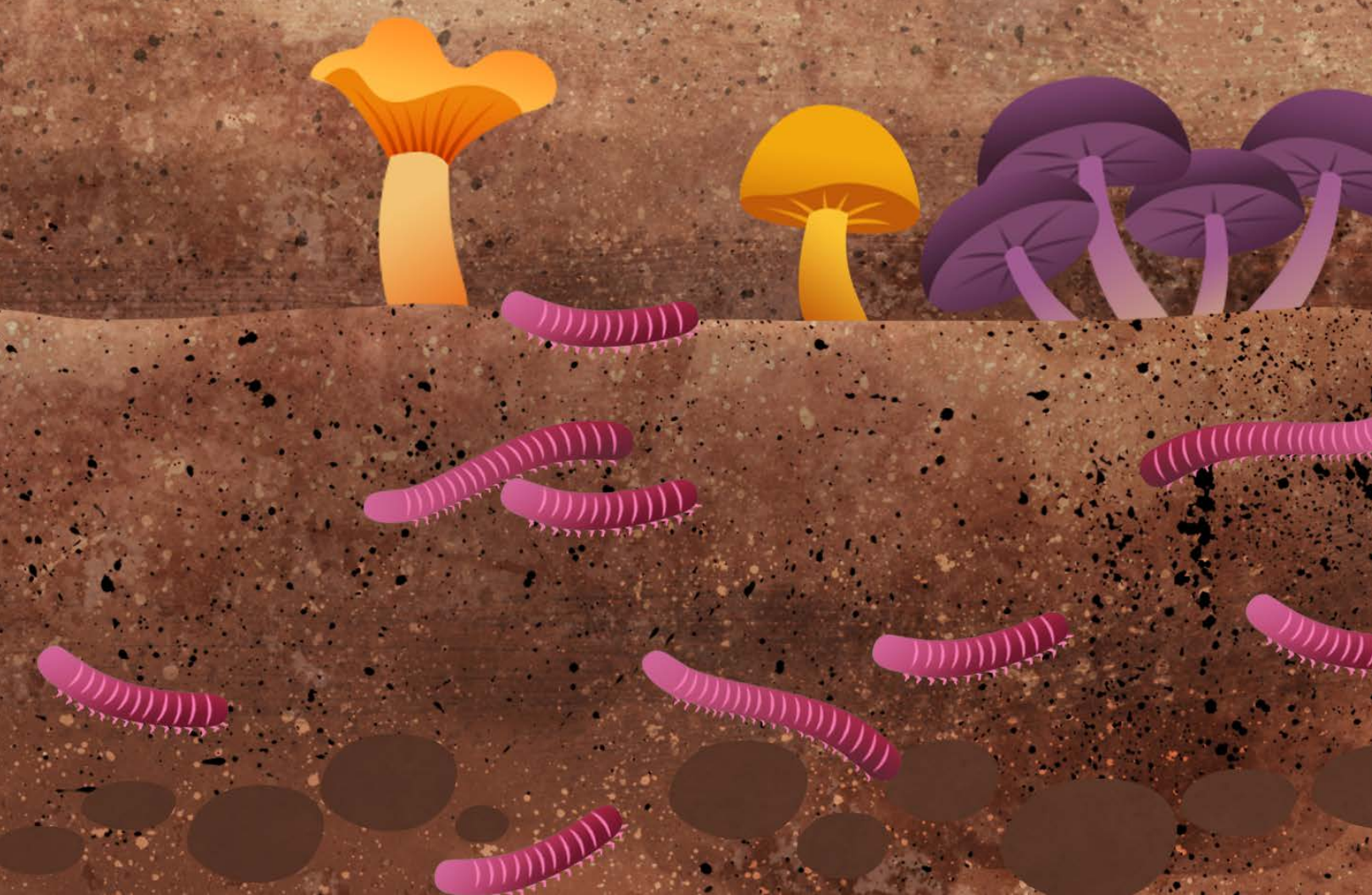
The cities of East Ferris and West Ferris are located on different sides of a mountain on the fictional Ferris Island. East Ferris is having a water shortage while West Ferris is not. As water resource engineers, students learn about the Earth system so they can help figure out what is causing the water shortage on one part of the island. They also design ways to alleviate the effects of water shortages, including freshwater collection systems and proposals for using chemical reactions to treat wastewater.



Featured activity:

Observing Substances and Mixing Substances (Lesson 5.1)

In Lesson 5.1 of *The Earth System*, students investigate how new substances form. Students observe a chemical reaction by mixing calcium chloride, baking soda, and phenol red solution. They discuss and record their observations of the substances before, during, and after the reaction.



FLEX

GRADE 5

Ecosystem Restoration

Unit storyline

Working as ecologists, students figure out why the organisms in a part of a Costa Rican rainforest ecosystem aren't growing and thriving. As they solve this problem, students learn more generally how organisms in an ecosystem get the matter and energy they need to survive. Along the way, students write a series of restoration plans that include arguments about why the rainforest ecosystem is not thriving and recommend actions to restore its health.

Featured activity: Terrarium Extensions (Flexextension)

In this Flexextension, students return to the terrariums they made earlier in the unit. Each group chooses what to add or change about their terrariums in order to make them healthier. Students may choose to add elements such as rocks, vegetables, or organisms or alter what is already in their terrariums. Groups implement these changes and then, over the course of several weeks, observe the effects of their changes.

