Teacher Guide

Science Passwords

Vocabulary for Science

Earth Science

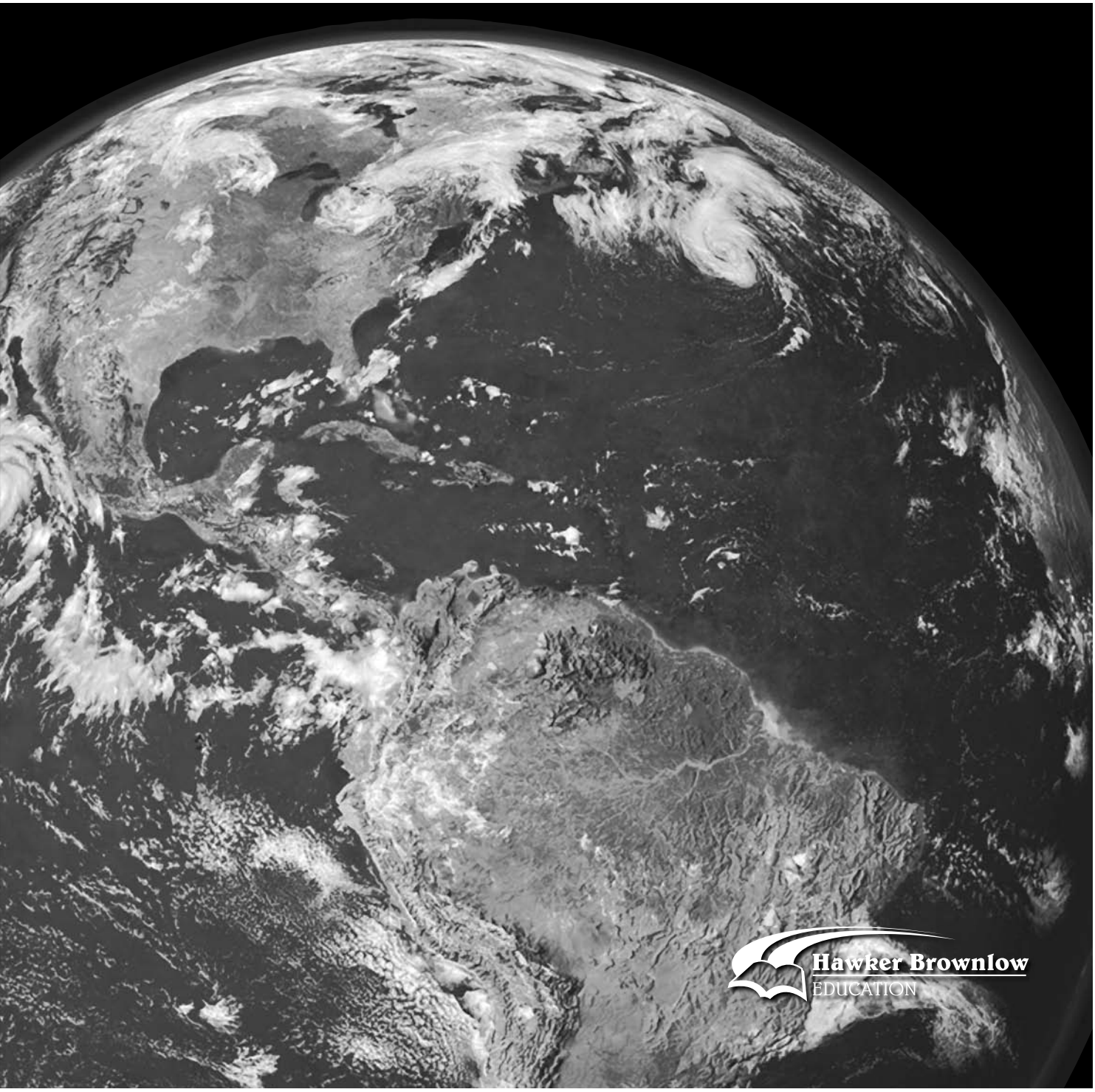

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Table of Contents

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Overview

Science Passwords: Vocabulary for Science is designed to build the vocabulary essential to understanding the key concepts students are studying in science. The topic areas and vocabulary words used in ***Science Passwords: Vocabulary for Science*** have been chosen based on the National Education Standards and the science standards developed by individual states. The topics and vocabulary words also align with the basal science textbooks of major publishers.

The ***Science Passwords: Vocabulary for Science*** program consists of eight books, Levels A to H, as well as individual **Earth Science, Life Science** and **Physical Science** books designed for use by older students.

Science Passwords: Vocabulary for Science is recommended for all students who need practice with the vocabulary that will help them succeed in science. These students may include English language learners as well as other striving learners. See pages 9–11 of this teacher guide for vocabulary teaching strategies that will help teachers meet the needs of all their students.

While the lessons in ***Science Passwords: Vocabulary for Science*** are grouped by topic area, each lesson may be taught independently. For a broad introduction to science, teachers may go through the book lesson by lesson. Alternatively, teachers may use only the lessons related to the science topic being taught in class. By providing an overview of year-level-appropriate science topics, ***Science Passwords: Vocabulary for Science*** may also be used to help students prepare and review for standardised tests in science.

The ***Science Passwords: Vocabulary for Science*** student book reading selections are available on an audio CD. The CD is a useful tool to use with English language learners or other students who would benefit from listening to the reading selections multiple times. Auditory learners will find listening to the selections on the CD especially helpful.

LESSON 13

Our Solar System and Beyond

(Student Book pages 76–81)

Lesson Summary Held together by gravity, the solar system includes the sun, the planets, and all other objects that orbit the sun, including natural satellites, asteroids and comets. The planets include the rocky inner planets that orbit closer to the sun and the outer planets. Our sun is one of hundreds of billions of stars in the Milky Way galaxy. Scientists use the light-year to measure some distances in space. The universe, all the matter and energy that exists, contains billions of galaxies.

TARGET VOCABULARY

solar system the sun and all the objects that move around it

gravity the force of attraction between objects

inner planets the planets closest to the sun

satellite an object that moves around a larger object, a moon

outer planets the planets farther from the sun

asteroid a small, solid object of rock and metal orbiting the sun

comet a ball of rock, dust, and ice orbiting the sun

galaxy a large group of stars, planets, asteroids, moons and comets held together by gravity

light-year the distance light travels in a year

universe all the matter and energy that exists

VOCABULARY STRATEGY: Using Illustrations

Illustrations, especially in textbooks, can provide readers with information about unknown words. Have students look at the diagram of the solar system on age 76 and find the orbits of the planets, the asteroid belt and the comet orbit. Ask students how the illustration at the top of page 77 is helpful. *(It shows the how the sizes of planets compare to each other.)* Remind students to refer to illustrations, here and in other reading, to get a clearer understanding of new words and ideas.

BEFORE READING

Activate Prior Knowledge

Ask students to name as many planets as they can and write the names on the board. Ask students to tell ways these planets are alike and ways they are different. Tell students that in this lesson, they will learn more about the planets and other objects in our solar system and beyond.

Introduce Target Vocabulary

Tell students they are about to read a selection about our solar system and beyond. Write the target vocabulary words on the board. Model the pronunciation of each word and have student volunteers repeat the word. Discuss the meaning of each word and, if necessary, write the definition next to the word.

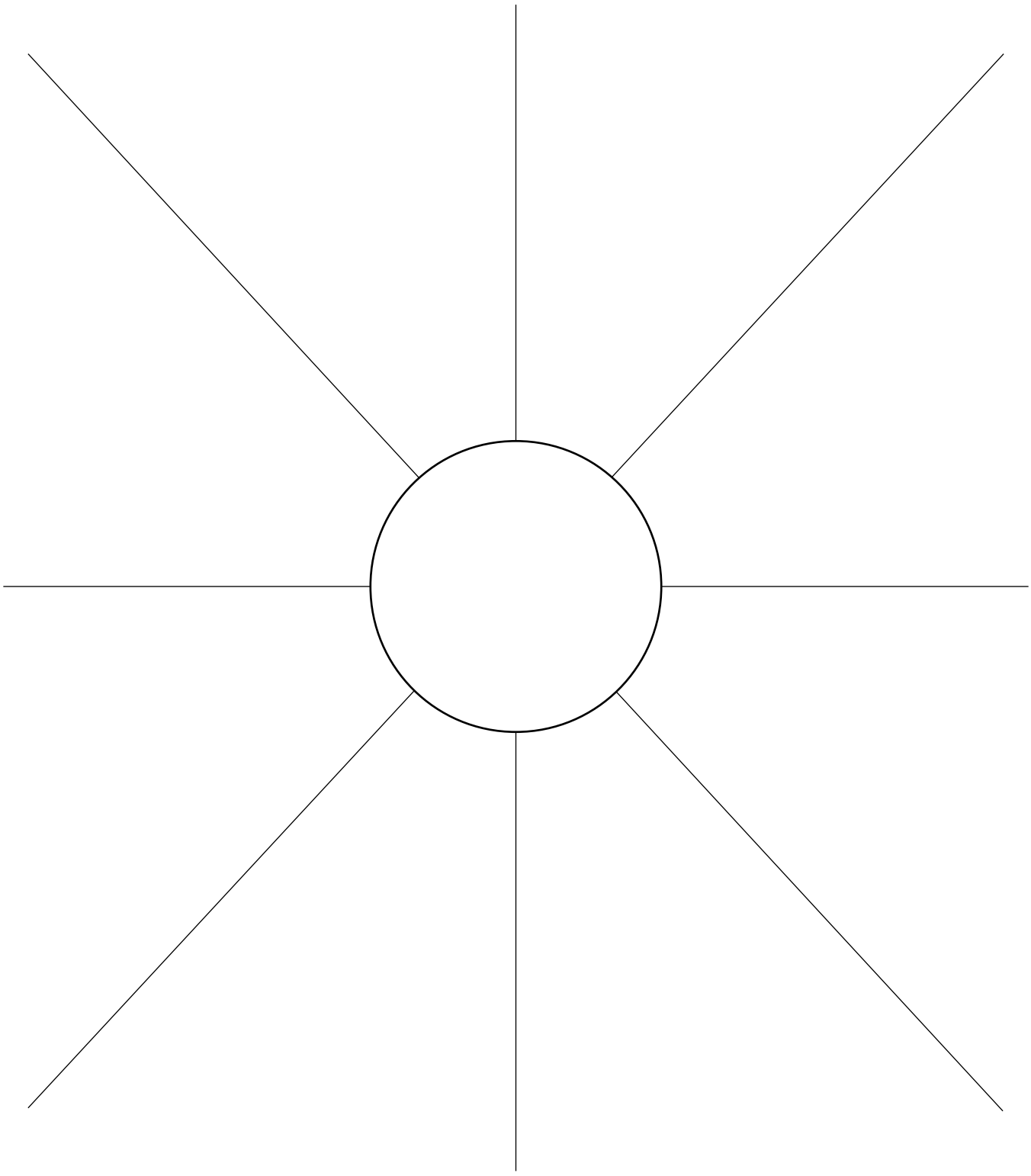
Present Graphic Organiser

Provide each student with a copy of Vocabulary Graphic Organiser: Venn Diagram, Teacher Guide page 77. Have students write *Solar System* in the overlap of the circles, *This Is Part of the Solar System* above the left circle, and *The Solar System Is Part of This* above the right circle. As they read the lesson, have students write the target vocabulary words under the title that seems most appropriate.

Word and Definition Cards for Lesson 13 are on pages 123 and 124 of the Teacher Guide.

Name _____ Date _____

Writing Graphic Organiser: Idea Wheel

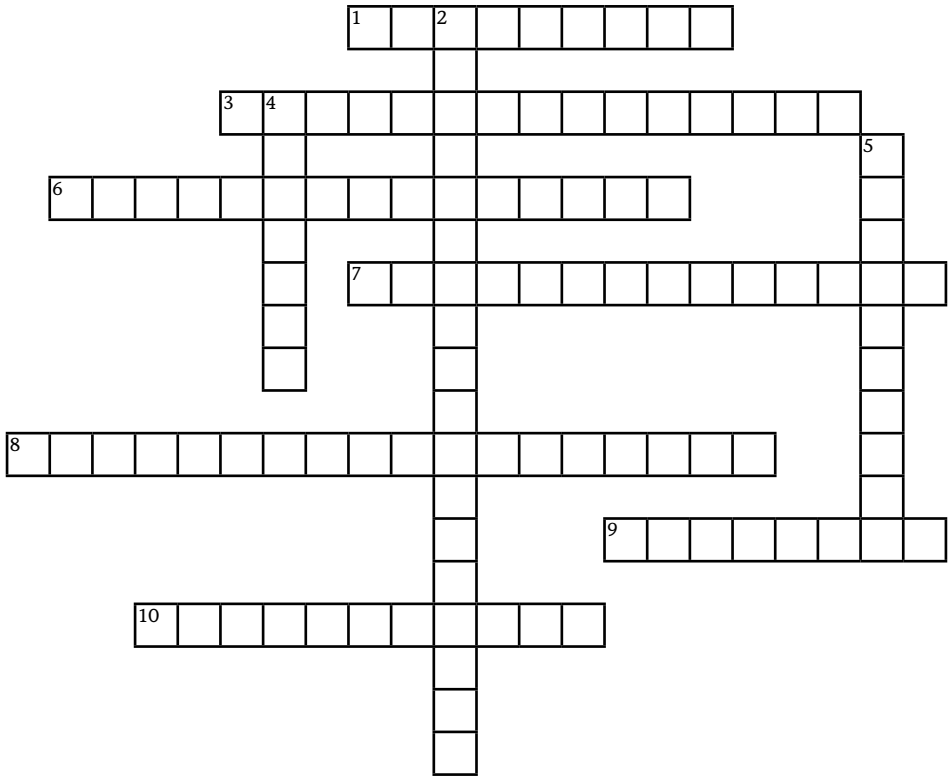


TAKE HOME 5

igneous rock	metamorphic rock	erosion	deposition
sedimentary rock	physical weathering	transportation	rock cycle
sediment	chemical weathering		

Use vocabulary words to complete the puzzle.

Changes and Forces in the Rock Cycle



ACROSS

1 all the changes rock goes through

3 rock formed from layers of sediment

6 rock formed from heat and pressure

7 the carrying of rock to a new place

8 the breaking down of rock into small pieces

9 bits of rock broken off from larger rock

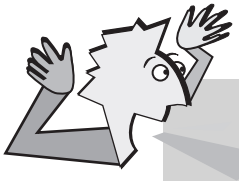
10 rock turned from hardened magma

DOWN

2 the breaking down of rock by chemicals

4 the wearing away of rocks and sediment by gravity, wind, water and ice

5 the dropping of rocks and sediment in a new place



Tell someone in your family what you have learned about changes and forces in the rock cycle.