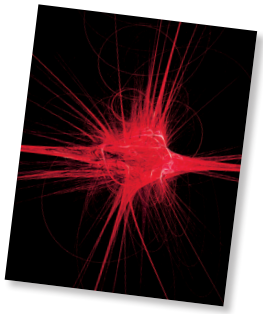
Teacher Guide

Our resource has been created for ease of use by both TEACHERS and STUDENTS alike.

Introduction



*This resource provides ready-to-use information and activities for remedial students in grades five to eight. Written to grade and using simplified language and vocabulary, **science** concepts are presented in a way that makes them more accessible to students and easier to understand. Comprised of reading passages, student activities and overhead transparencies, our resource can be used effectively for whole-class, small group and independent work.*

How Is Our Resource Organized?

STUDENT HANDOUTS

Reading passages and **activities** *(in the form of reproducible worksheets)* make up the majority of our resource. The reading passages present important grade-appropriate information and concepts related to the topic. Embedded in each passage are one or more questions that ensure students understand what they have read.

For each reading passage there are BEFORE YOU READ activities and AFTER YOU READ activities.

- **The BEFORE YOU READ activities prepare students for reading by setting a purpose for reading. They stimulate background knowledge and experience, and guide students to make connections between what they know and what they will learn. Important concepts and vocabulary are also presented.**
- **The AFTER YOU READ activities check students' comprehension of the concepts presented in the reading passage and extend their learning. Students are asked to give thoughtful consideration of the reading passage through creative and evaluative short-answer questions, research, and extension activities.**

Hands-on activities are included to further develop students' thinking skills and understanding of the concepts. The **Assessment Rubric** (*page 4*) is a useful tool for evaluating students' responses to many of the activities in our resource. The **Comprehension Quiz** (*page 48*) can be used for either a follow-up review or assessment at the completion of the unit.

PICTURE CUES

This resource contains three main types of pages, each with a different purpose and use. A **Picture Cue** at the top of each page shows at a glance, what the page is for.

Teacher Guide
- Information and tools for the teacher

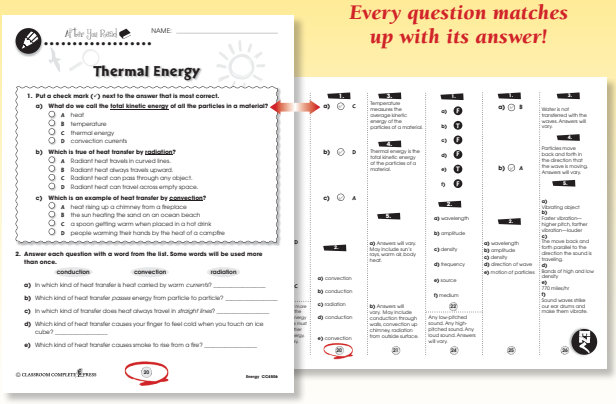
Student Handout
- Reproducible worksheets and activities

Easy Marking™ Answer Key
- Answers for student activities

EASY MARKING™ ANSWER KEY

Marking students' worksheets is fast and easy with this **Answer Key**. Answers are listed in columns – just line up the column with its corresponding worksheet, as shown, and see how every question matches up with its answer!

Every question matches up with its answer!



NAME: _____

What Is Energy?

Science is mostly about matter and **energy**. We say that matter is anything that has mass and takes up space. That is easy to understand. But energy is more mysterious. We can say that energy is the ability to do work. That is true, but it does not give a very clear idea of what energy is.

The best way to understand energy is to first look at all the different kinds of energy. The more kinds of energy we learn about, the more we get a feeling for it. Energy is like happiness. You can't give a simple scientific explanation of happiness, but you know when you've got it.

First, think about **mechanical energy**. There are two kinds of mechanical energy, **potential energy** and **kinetic energy**. Things in a high place have potential energy.

Name <u>one</u> thing that has potential energy and <u>one</u> thing that has kinetic energy.

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_____

Things that are moving have kinetic energy.

Thermal energy is the energy in the moving particles of a material. This means that thermal energy is also a kind of kinetic energy. When thermal energy moves from one thing to another it is called **heat**.

Some kinds of energy travel in the form **waves**. Waves on water carry energy. **Sound** and **light** are two other kinds of energy that travel in waves.

Other kinds of energy are **chemical energy** and **electrical energy**. Stretched springs and rubber bands also have energy.

As we study these different kinds of energy, you will begin to get an idea of what energy is.

NAME: _____

Comprehension Quiz

Part C

Answer each question in complete sentences.

1. What is **potential** energy? What is **kinetic** energy? 3

_____

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2. Tell how particle motion explains heat transfer by **conduction**. 3

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3. What do the **amplitude** and **frequency** of a sound tell you about the sound? 3

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4. Name **three** kinds of electromagnetic radiation we cannot see with our eyes. 3

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5. Name **two** energy transformations that happen when candle burns. Name **two** ways heat is being transferred away from the flame. 3

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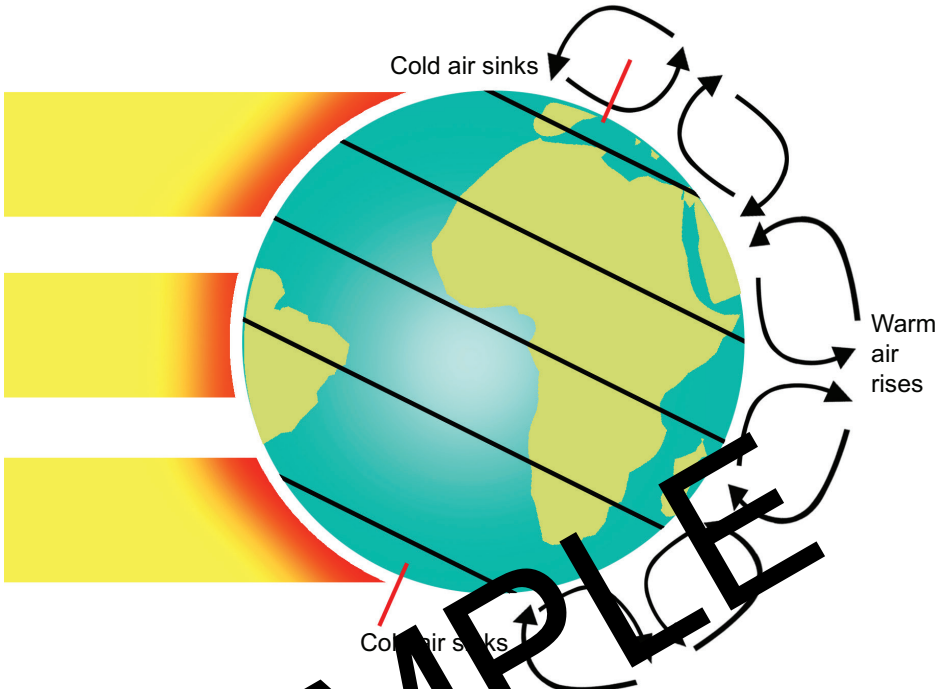
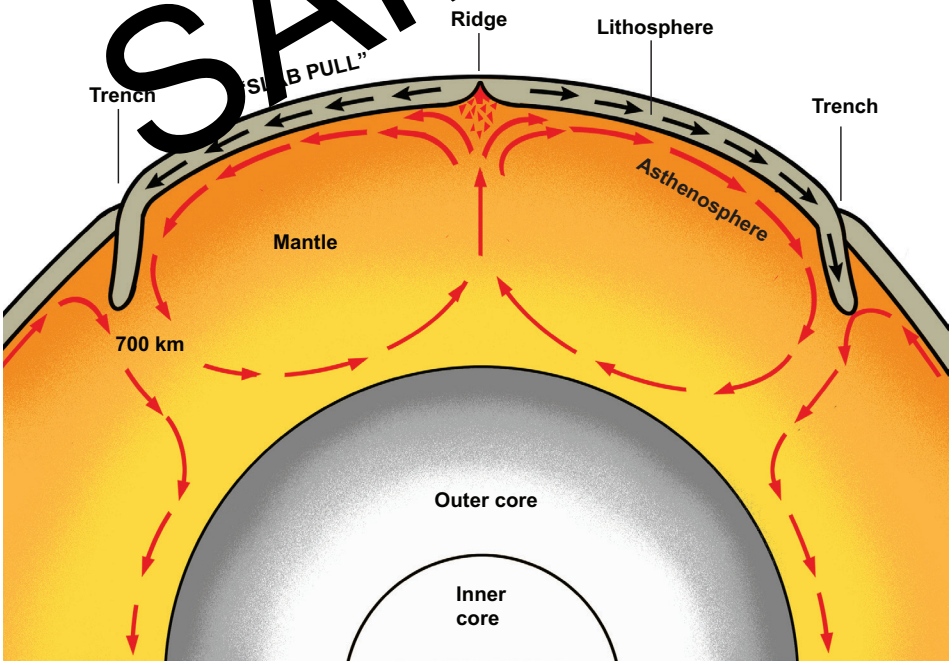
SUBTOTAL: /15

Convection Currents in the Atmosphere and in the Mantle



CONVECTION IN THE ATMOSPHERE



CONVECTION IN THE MANTLE