CONTENTS

FEATURES

CAREERS—SERVING AS A . . .

CASE STUDIES

TAKING OFF WITH PHYSICAL SCIENCE!

Have you ever thought about how pilots get all the experience they need to safely fly in all conditions? Pilots obviously need actual flight time for training, but there are many things, such as aircraft malfunctions and severe weather, for which a real airplane is not the ideal classroom! That is where *flight simulators* come in. For a simulator to be realistic, the modeling of aircraft movement has to be accurate. Programmers have to model the behavior of the aircraft as well as the aircraft's response to weather conditions and other inputs. By using the computer models in flight simulators, we can prepare pilots to handle both routine and extreme conditions. There's a lot of science and technology that goes into making these simulators realistic enough to prepare pilots for anything they might encounter.

But what exactly is science? You might think that it's discovering truth about the world around us. In reality it is about *creating models* that seek to explain and describe what we observe in the world. You're probably familiar with physical models, perhaps of ships, airplanes, or even atoms. But models can also be conceptual or mathematical—they can even be computer simulations.

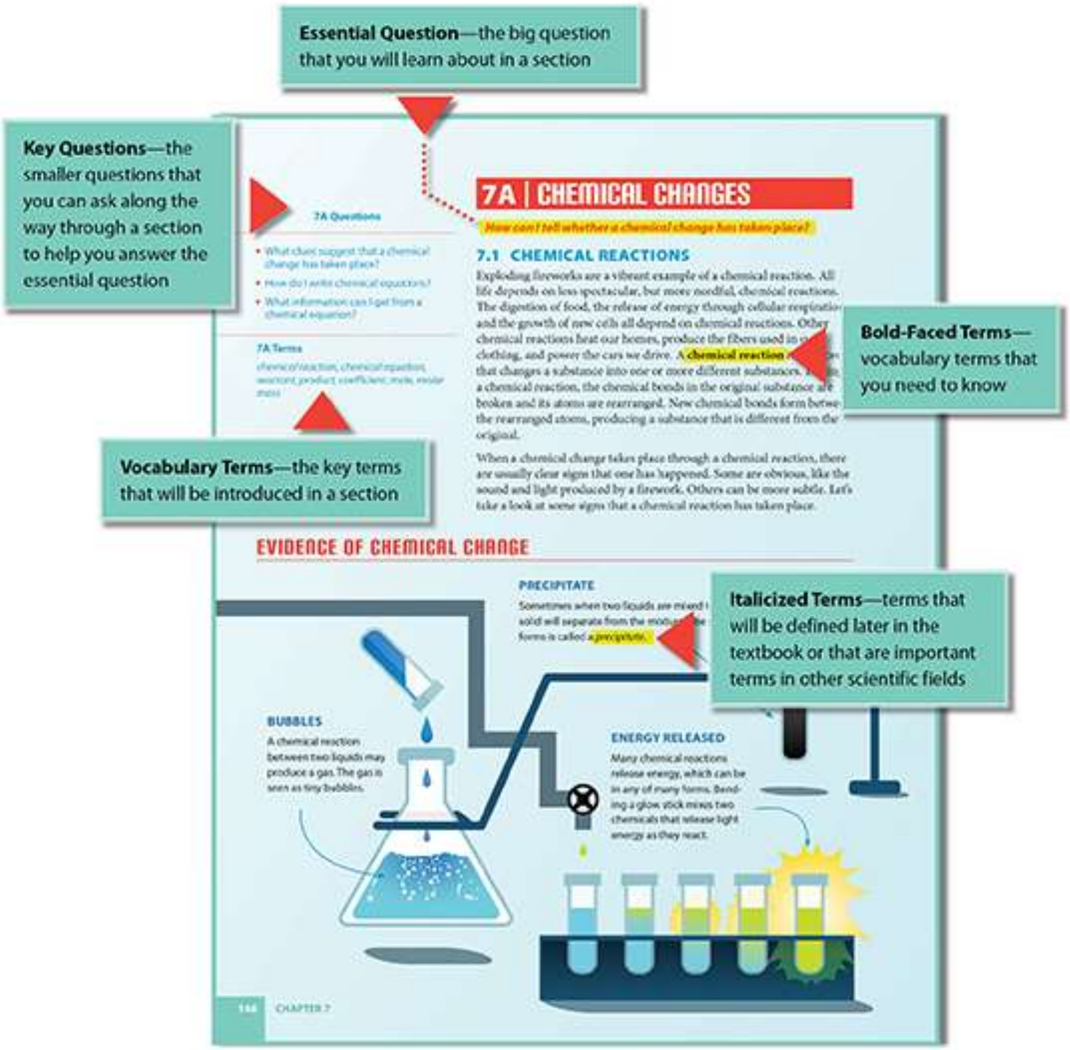
Physical Science 6th Edition will provide you with the foundation for further study in the fields of chemistry and physics. These two sciences are ones that you do all the time, though you may not realize it. Chemistry impacts your life when you eat, when you use cleaners, and when you cook. Physics is instrumental in playing sports, doing art, and playing an instrument. In your study of physical science, you will learn of the models that scientists have developed and modified throughout history to better explain and describe the world around them. This study of physical science will have you answer the following questions.

1. How do scientists use models in science?
2. What are the limitations to models in science?
3. How accurately have scientific theories predicted results throughout history?
4. What does the periodic table tell me about the physical and chemical properties of elements?
5. How are energy and matter related?
6. How can I use models to describe, explain, and analyze chemical and physical systems?
7. How can I use biblical principles, outcomes, and motivations to decide what is right or wrong in the field of physical science?

So make sure your seat belts are securely fastened and prepare to launch into our study of physical science!

TAKE A PEEK INSIDE!

We've designed this textbook with you in mind. We hope it will help you appreciate the wonders of God's creation even more. Flip through the following pages to see the features that we've included to help you succeed in *Physical Science*. In the back of the book you'll find appendixes, a glossary, an index, and the periodic table of the elements.



Chapter Opener—a short article that highlights issues and developments in physical science that demonstrate how science intersects with your life

Worldview Sleuthing Boxes—inquiry-based investigations that help you think through current topics in physical science through the lens of Scripture

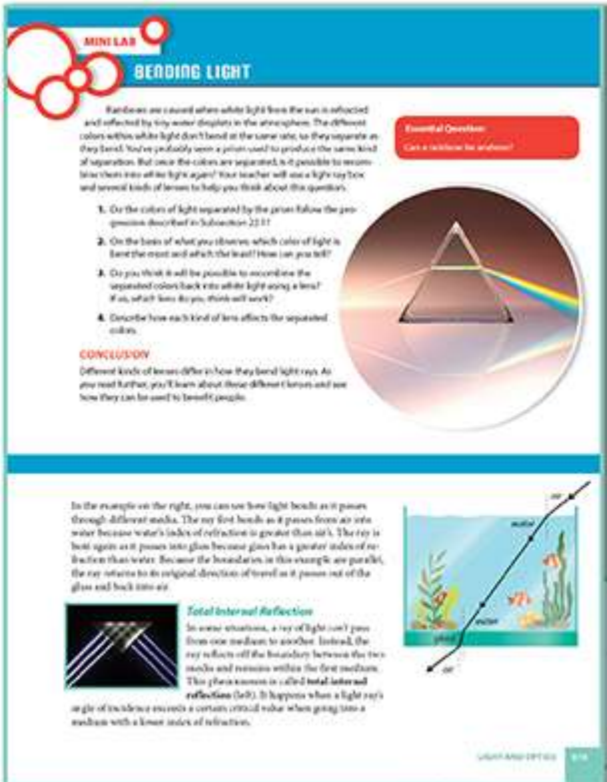
Chapter Summary—handy statements of the big ideas of the chapter, including vocabulary lists

Review Questions—questions that will have you recall facts, demonstrate your understanding of concepts, and cause you to use critical thinking

Case Studies—opportunities to apply what you have learned in physical science to a real-life example

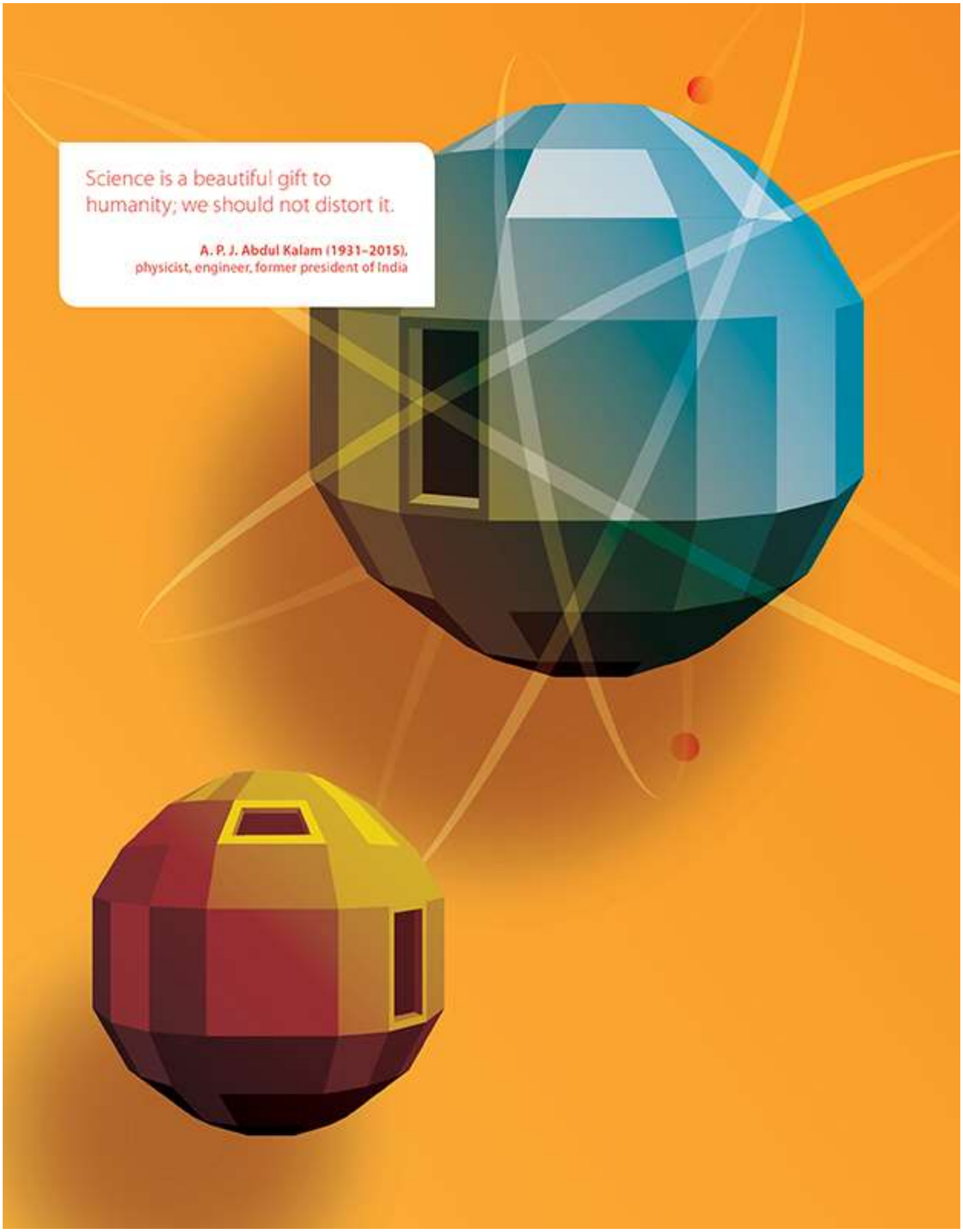
Career Boxes—information about careers in physical science that can be pursued to wisely use God's world and help people

Ethics Boxes—opportunities to apply a biblical worldview to ethical issues in physical science



Mini Labs—short hands-on activities to get you thinking and working like a scientist

How It Works—examples of physical science applications in everyday items


Science is a beautiful gift to humanity; we should not distort it.
A. P. J. Abdul Kalam (1931–2015),
physicist, engineer, former president of India