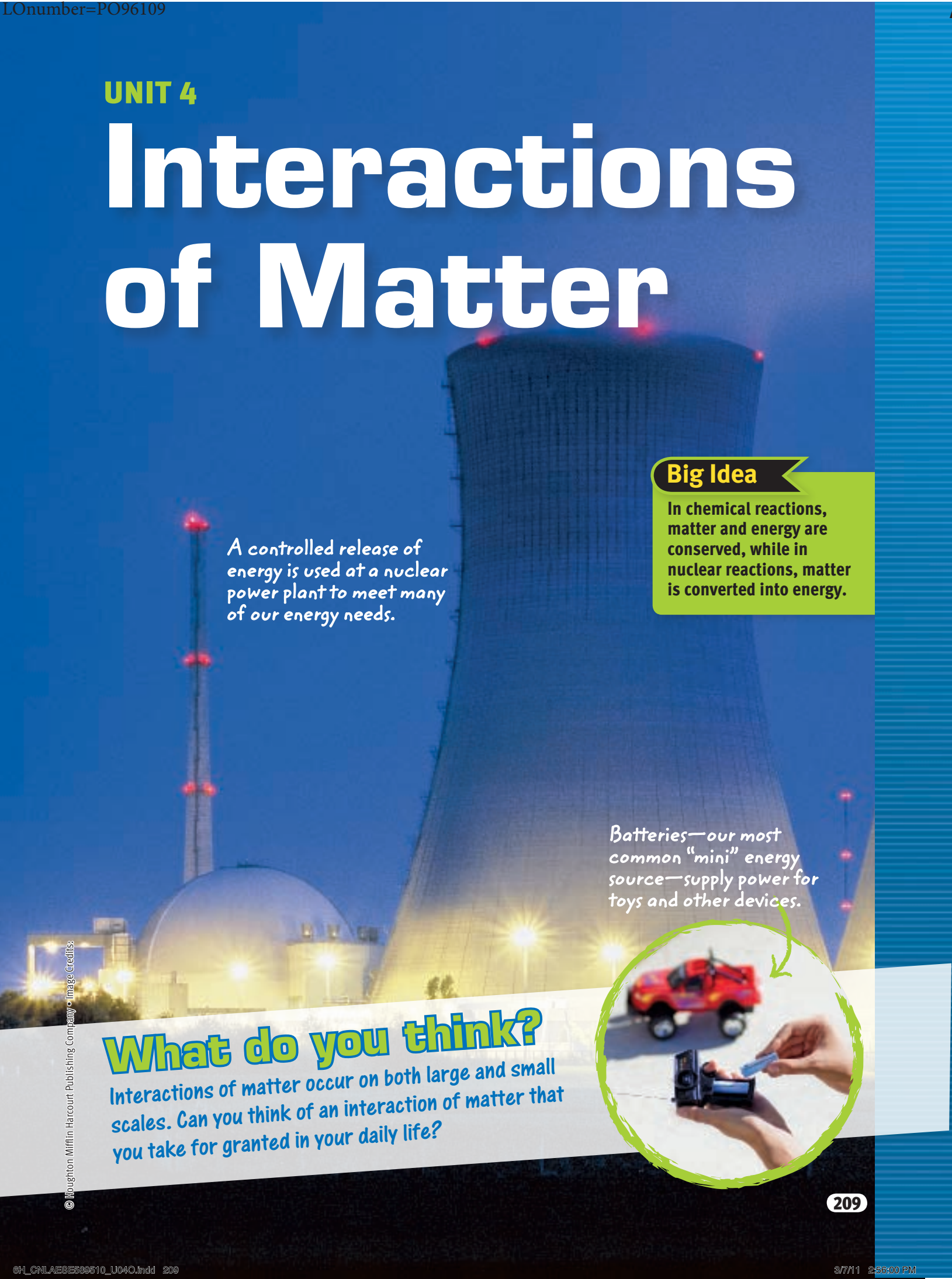




Answers

Answers will vary. Cell phones use interactions of energy that we take for granted in daily life. Electricity powers most home appliances and light sources.

InCopy Notes

- 1. File CED by BPN 2/21/11.
- 2. DSN: The arrow is crashing with the caption. CED-BPN 2/21/11.

InDesign Notes

- 1. DSN—I have changed the position of the caption and inset/white band to help the main image show—PR 1/14

Unit 4
Interactions
of Matter

Lesson 1
Chemical Reactions 212

Lesson 2
Organic Chemistry 224

People in Science 238

Lesson 3
Nuclear Reactions 240

Unit Review 258

6H_CNLAESE589510_U04O.indd 210:211

InCopy Notes

DSN: Can we have one more line of space in intro paragraph pls? JMc 3/3/11

CITIZEN SCIENCE

Medical
Metamorphosis

The study of chemistry has helped transform and improve medical science for the better health of humans worldwide. Scientists work to discover new ways to help people live healthier, longer lives.

1889–1911

Marie Curie proposed the use of radium to relieve suffering and established a radioactivity laboratory. Curie, along with her husband, won the Nobel Prize in Physics in 1903. She won a second Nobel Prize in Chemistry in 1911 for her work in radioactivity.

1931–1939

The son of former Alabama slaves, **Percy Julian** was one of the first African Americans to earn a Ph.D. in chemistry. His work in discovering the chemical properties of plant steroids led to the development of medicinal steroids.

1951–1953

In 1953, **James Watson and Francis Crick** proposed that DNA consisted of the now familiar double-helical structure. This led to breakthroughs in genetic diseases and in crime scene identifications.

1991

Richard R. Ernst won the Nobel Prize for his work in the development of high resolution nuclear magnetic resonance (NMR) spectroscopy. Physicians use the MRI to scan patients for serious internal injuries.

Take It Home

1 Think about It

With an adult, talk about personal experiences with medical breakthroughs related to chemistry. Friends or family members may be living with a genetic disease. Sometimes patients are diagnosed using MRI technology.

2 Ask Some Questions

Conduct Internet research to learn more about Percy Julian's life and work.

A Name two medicinal uses for plant steroids and one non-medicinal use

B How is Julian's work still being carried out?

3 Make a Plan

Investigate a career in the medical field. Find out the steps to becoming a doctor, pharmacist, dentist, nurse, or other health care professional. Make notes about your findings.

- 2A. Sample answer: Plant steroids are used for lowering cholesterol in humans and used to help manufacture progesterone and androgen, which are human sex hormones and sometimes used for treating cancer or for birth control. Non-medicinal use would include athletes who use performance-enhancing drugs.
- 2B. Sample answer: Chemists are still using many of the plant steroids Julian developed to see if they can create new medications to treat diseases.
3. Accept all reasonable answers.

12345

InDesign Notes

1. ED: Please provide the detailed contents on page 210.
2. DSN: Overset text in CHT_AHead on page 210. I fixed, but had to reduce the font size. MW
3. DSN/COMP: The text "Unit Review" is not to spec. Please fix ~PR 1/14

InCopy Notes

1. DSN: Extra caption (if it will fit) for diabetes pump: Many people with diabetes prefer to use a pump to give themselves insulin. EBR 1/19
2. PR: I agree with cutting the captions on the images. Students will uncover these facts in their research [pjm-7357-1/21/11]- ED: I removed caption for insulin pump per this comment ok? MW 128
3. DSN: I edited the green boxes to be more parallel--are they ok style-wise? Also, please check the spacing in "1953"; can "Watson" be pulled up next to "James"? [pjm-7358-1/21/11]; ED: Looks good. MW
4. DSN: please adjust the WOLs in "Take It Home"--things look odd. I don't like the 4 WOLs that are at the top of the second column [pjm-7357-1/21/11]. ED: I rearranged questions so that WOLs would work out better. OK? MW 1:28 -- yes. JMc 1/28/11
5. DSN: please replace bullets in #2 with A and B [pjm-3/1/11];

12345

InDesign Notes

1. ED: Text boxes are set to the same line counts as on the thumbnail. There is overset on this page. MW 1:13
2. ED: Does MRI image need a caption? MW 1:13
3. DSN/EDIT: Please eliminate the WOL line break to the next column. ~PR 1/14
4. EDF/DSN: We often do not have lon captions for images in timelines as the context of the green boxes should cover it. I suggest limiting it to simple labels on the Marie Curie and Percy Julian images (or possibly delete them altogether) ~PR 1/14
5. DSN/EDIT: Why are some names bold face while others are not? ~PR 1/14
6. ED: I looked through the previous edition to look at the styling for the questions under item 2 and they were bulleted. OK? If I make them lettered, it's a san serif type. MW 2:4
7. DSN: 6-8-H_CNLAESE758951_367, 6-8-H_CNLAESE758951_368 This are are missing in MediaBin PMG 2/11