

Grade 5 Science

Unit 6: Human Hormones and Reproduction

7 lessons and a unit quiz. Use this pack with the **Human Hormones and Reproduction Student Reader** (print it, or download it once from the course) to teach the whole unit without the internet.

What is in this pack

- A lesson plan for each chapter: the Big Question, words to know, which pages to read, questions to talk over and the activity pages.
- The unit quiz, ready to print.
- Answers for the teacher at the back: every discussion question and the quiz key.

This course is based on an original work of the Core Knowledge® Foundation (www.coreknowledge.org) made available through licensing under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. This does not in any way imply that the Core Knowledge Foundation endorses this work. PGAMO added the lesson pages, study packs and quizzes layout, and shares them under the same license. License: CC BY-NC-SA 4.0 (<https://creativecommons.org/licenses/by-nc-sa/4.0/>).

Lesson schedule

Two or three lessons a week, about 30 minutes each. Tick each one off as you go.

	Lesson	Reader pages	Activity pages
☐	Lesson 1: Growth and Change	PDF pages 7-8	AP 1.1
☐	Lesson 2: Glands and Hormones	PDF pages 9-14	AP 2.1
☐	Lesson 3: The Hypothalamus, Pituitary, and Adrenal Glands	PDF pages 15-20	AP 3.1
☐	Lesson 4: The Thyroid and the Pancreas	PDF pages 21-26	AP 4.1
☐	Lesson 5: Human Adolescence	PDF pages 27-32	AP 5.1
☐	Lesson 6: The Reproductive System	PDF pages 33-40	AP 6.1
☐	Lesson 7: Sexual Reproduction	PDF pages 41-48	AP 7.1, AP 7.2
☐	Unit review and assessment	—	—
☐	Words quiz	—	—

Page numbers are the PDF page numbers of the Student Reader file, so they match what your PDF reader shows.

Lesson 1: Growth and Change

THE BIG QUESTION

How do humans change as they mature?

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 18–22: the steps, materials and timing for this lesson.

Read

Read Student Reader, Chapter 1: “Growth and Change”: PDF pages 7–8. Look at the pictures and maps together.

Talk it over

1. What body parts change?
2. What makes my body change?
3. How have you changed from when you were a newborn baby to now?
4. How does the human body change over time?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: How do humans change as they mature?

Activity pages

- Activity Page 1.1: Growth and Change from Infancy to Childhood — Teacher Guide PDF page 56

Lesson 2: Glands and Hormones

THE BIG QUESTION

What is the endocrine system?

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 23–27: the steps, materials and timing for this lesson.

Read

Read Student Reader, Chapter 2: “Glands and Hormones”: PDF pages 9–14. Look at the pictures and maps together.

Talk it over

1. What happens if the demand for blood sugar is high?
2. What system helps the body maintain homeostasis?
3. How are these hormones different from the hormones on the previous pages?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: What is the endocrine system?

Activity pages

- Activity Page 2.1: Structures of the Endocrine System — Teacher Guide PDF page 57

Lesson 3: The Hypothalamus, Pituitary, and Adrenal Glands

THE BIG QUESTION

What do the hypothalamus, pituitary, and adrenal glands do?

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 28–32: the steps, materials and timing for this lesson.

Read

Read Student Reader, Chapter 3: “The Hypothalamus, Pituitary, and Adrenal Glands”: PDF pages 15–20. Look at the pictures and maps together.

Talk it over

1. What is the name of the response when someone is surprised?
2. What body system forms the path for hormones to move through the body?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: What do the hypothalamus, pituitary, and adrenal glands do?

Activity pages

- Activity Page 3.1: Parts of the Endocrine System — Teacher Guide PDF page 58

Lesson 4: The Thyroid and the Pancreas

THE BIG QUESTION

What do the thyroid and pancreas do?

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 33–37: the steps, materials and timing for this lesson.

Read

Read Student Reader, Chapter 4: “The Thyroid and the Pancreas”: PDF pages 21–26. Look at the pictures and maps together.

Talk it over

1. How many calories will a body consume in one hour?
2. Why might someone have snack time after a soccer game?
3. What happens to the homeostasis of the body when you eat a candy bar with thirty grams of sugar in it?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: What do the thyroid and pancreas do?

Activity pages

- Activity Page 4.1: More Parts of the Endocrine System — Teacher Guide PDF page 59

Lesson 5: Human Adolescence

THE BIG QUESTION

What are puberty and adolescence?

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 38–42: the steps, materials and timing for this lesson.

Read

Read Student Reader, Chapter 5: “Human Adolescence”: PDF pages 27–32. Look at the pictures and maps together.

Talk it over

1. What triggers the start of puberty in the human body?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: What are puberty and adolescence?

Activity pages

- Activity Page 5.1: Growth and Change from Childhood to Puberty — Teacher Guide PDF page 60

Lesson 6: The Reproductive System

THE BIG QUESTION

What are the parts of the human reproductive system, and how do they function?

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 43–48: the steps, materials and timing for this lesson.

Read

Read Student Reader, Chapter 6: “The Reproductive System”: PDF pages 33–40. Look at the pictures and maps together.

Check for understanding

- Answer the Big Question in a sentence or two: What are the parts of the human reproductive system, and how do they function?

Activity pages

- Activity Page 6.1: Body Changes for Sexual Reproduction — Teacher Guide PDF page 61

Lesson 7: Sexual Reproduction

THE BIG QUESTION

What is sexual reproduction?

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 49–54: the steps, materials and timing for this lesson.

Read

Read Student Reader, Chapter 7: “Sexual Reproduction”: PDF pages 41–48. Look at the pictures and maps together.

Talk it over

1. internet access and the means to project images/video for whole-class viewing
Activity Pages Internal or External Fertilization?
2. In terms of what the embryo and fetus need, how are internal and external fertilization different?
3. In terms of what the embryo needs, how are internal and external fertilization alike?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: What is sexual reproduction?

Activity pages

- Activity Page 7.1: Internal or External Fertilization? — Teacher Guide PDF page 62
- Activity Page 7.2: Growth and Change from Puberty to Adulthood — Teacher Guide PDF page 63

UNIT REVIEW

Unit review and assessment

- Activity page answer key (for the teacher): Teacher Guide PDF pages 64–65

WORDS QUIZ

Human Hormones and Reproduction

Name: _____ Date: _____

Circle the letter of the best answer.

1. Which word means “a body organ that makes substances used by the body”?
 - a) sperm
 - b) gland
 - c) pancreas
 - d) egg
2. Which word means “substances made in the body that produce effects in other cells or tissues in the body hyper-, pref. high or above normal hypo-, pref. low or below normal”?
 - a) intercourse
 - b) sperm
 - c) hormone
 - d) adrenaline
3. Which word means “to gradually release a substance”?
 - a) puberty
 - b) secrete
 - c) penis
 - d) testes
4. Which word means “the organs and structures that function to produce offspring”?
 - a) insulin
 - b) fetus
 - c) reproductive system
 - d) control
5. Which word means “the sex that has the capacity to produce the small cells capable of fertilizing female egg cells”?
 - a) male
 - b) pregnancy
 - c) secrete
 - d) feedback loop
6. Which word means “a very young human being between being a newborn and one year old”?
 - a) infant
 - b) penis
 - c) feedback
 - d) child

- 7.** Which word means “a system in which outputs of a system are looped back into the system as inputs”?
- a) feedback loop
 - b) regulation
 - c) newborn
 - d) growth
- 8.** Which word means “the period of development when the embryo or fetus is attached inside the body of the parent”?
- a) gestation
 - b) child
 - c) hypothalamus
 - d) adrenal gland
- 9.** Which word means “a developing organism that has reached its basic structural form”?
- a) fetus
 - b) male
 - c) embryo
 - d) homeostasis
- 10.** Which word means “fluid that contains the male reproductive cells”?
- a) maturation
 - b) reaction
 - c) homeostasis
 - d) semen
- 11.** Which word means “sexual contact between individuals”?
- a) pregnancy
 - b) fetus
 - c) intercourse
 - d) male
- 12.** Which word means “the opening where urine leaves the body. In males, it is also the pathway for sperm from the testes”?
- a) duct
 - b) urethra
 - c) thyroid
 - d) fetus

Answers

Lesson 1: Growth and Change

1. **What body parts change?**
Is growing the same thing as changing?
2. **What makes my body change?**
Can I change back?
3. **How have you changed from when you were a newborn baby to now?**
I used to crawl, but then I learned to walk. I am much taller and have hair. Ask: What is the relationship between being mature and growth?
4. **How does the human body change over time?**
People grow taller and larger. Their body shapes change. As they grow, they develop more skills like running and speaking. Ask: What role do hormones have in this growth and change?

Lesson 2: Glands and Hormones

1. **What happens if the demand for blood sugar is high?**
You feel hungry. Add weights to the empty pan until there is more “food” than demand for blood sugar. Ask: What happens once the amount of food eaten is greater than the demand?
2. **What system helps the body maintain homeostasis?**
The endocrine system
3. **How are these hormones different from the hormones on the previous pages?**
The hormones listed on this page are more related to longterm functions such as growth and reproduction.

Lesson 3: The Hypothalamus, Pituitary, and Adrenal Glands

1. **What is the name of the response when someone is surprised?**
The fight or flight response
2. **What body system forms the path for hormones to move through the body?**
The circulatory system

Lesson 4: The Thyroid and the Pancreas

1. **How many calories will a body consume in one hour?**
Seventy-five calories Explain that ninety-five calories is about the same amount of energy in a mediumsized apple. Have students calculate the number of calories their body would consume between lunch and dinner. (See Know the Science.)
2. **Why might someone have snack time after a soccer game?**
To replace the calories used up playing soccer
3. **What happens to the homeostasis of the body when you eat a candy bar with thirty grams of sugar in it?**

Homeostasis is thrown out of balance, and the body has to release hormones to deal with the excess sugar.

Lesson 5: Human Adolescence

1. What triggers the start of puberty in the human body?

The hypothalamus secretes growth hormones to the pituitary gland. The pituitary gland releases hormones to the ovaries in females and testes in males, which signal both those glands to release sex hormones, which start the changes seen in puberty.

Lesson 7: Sexual Reproduction

1. internet access and the means to project images/video for whole-class viewing Activity Pages Internal or External Fertilization?

AP 7.1

2. In terms of what the embryo and fetus need, how are internal and external fertilization different?

In internal fertilization, the embryo and fetus share some body functions with the parent and depend on them to develop. In external fertilization, the embryo has everything it needs to survive.

3. In terms of what the embryo needs, how are internal and external fertilization alike?

In the cases of egg-laying animals, both their eggs and the embryos of animals that use external fertilization have everything they need internally to develop.

Unit quiz key

1. b 2. c 3. b 4. c 5. a 6. a 7. a 8. a 9. a 10. d 11. c 12. b