

Grade 7				
The Human Body-Human Development and Sexuality				
Chapter 5 Lesson 1				
Page	Question	Answer(s)	Links/Sources	Student Resources
178	Why do you think many people describe this period in life as one of the most challenging?	*During this time, young people have to cope with many changes..		
178	What are the main reproductive organs in females? In males?	*Females: uterus, vagina, ovaries, fallopian tubes. Males: penis, testes, scrotum.		
179	What worries you about this stage?	Sample answer: Will I have friends. Will I be attractive. Will I develop bad acne?		
179	Will your concerns be similar to your classmates?	Sample answer: Yes.		
180	How does this kind of budding compare to the budding that occurs on plants?	*Plants bud new growth but their growth does not always break off to form another plant or organism in the case of some asexually reproducing organisms, like hydra. When pruned, plants will generate new tissue.		
180	How can you use this information to grow more potatoes?	*The eyes are locations where asexual reproduction is occurring to produce new shoots and plants.		
180	Did you know that a pet mouse can reproduce quickly, breeding as often as every 20 days?	Sample answer: No.		
180	How many babies could an adult female mouse have in one year?	A mouse has an average lifespan of 18 months, or 547.56 days. Divide this by 20 days per breeding cycle, a mouse can have about 27.38 breeding cycles. Multiply this by 10 would give you 274 babies per year.		
180	How many children could a human woman have in her lifetime?	Sample answer: According to the source a limit of 40 seems probable. Although mathematically possible, they may not be safe pregnancies.	https://www.ndtv.com/health/world-population-day-how-many-children-can-a-woman-safely-deliver-1723242	
180	What factors might limit the number of children that she can produce?	Sample answer: Multiple pregnancies can be life threatening, inelasticity of womb, increased incidence of hemorrhage, trauma to the body from childbirth, recovery time, there's the issue of economics.		
180	What genetic diversity can you observe in dogs?	Sample answer: There are so many breeds of dogs. This is accomplished by humans breeding dogs for their desired traits by selective breeding. The American Kennel Club recognizes 179 breeds, with 79 working towards full recognition.	https://www.rd.com/article/how-many-dog-breeds-in-the-world/	
180	How does genetic diversity help an organism survive?	The greater the diversity within the species the greater its chance of survival because it can adapt to changes in the environment.		
180	How does mitosis occur?	Sample answer: The cells go through several stages including the duplication of the genetic information of the cell and the separation of that genetic material into two identical nuclei and the final division that produces two identical cells.		

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180	How could you use several colors of modeling clay to represent mitosis?	Sample answer: You could use the colors of clay to make 2 or 3 pairs of cylinders to model the chromosomes and then show how these are doubled and separated in subsequent models to show the basic process of mitosis.		
180	In time, the new plant will be able to grow on its own. Why?	Sample answer: The structures of the plant will mature and function as they are supposed to and, if conditions are suitable, the plant will go through in natural life cycle.		
181	What is an appropriate way to describe mitotic division in plants?	*New plants from a single bud similar to mitosis in which daughter cells are produced from a single cell.		
181	In asexual reproduction, what happens after the first cell divides?	*The two cells continue to divide, becoming four cells, eight cells, and so on.		
181	How do you know when budding has occurred?	*Sample answer: The tentacles and mouth of the new hydra begin to develop, which represents the beginning of a new organism.		
181	Why do you think God created some organisms to be able to reproduce on their own?	Sample answer: Offspring are exactly identical and can multiply under favorable environmental conditions.		
181	Why do you think He didn't create all creatures with this ability?	Sample answer:.. Bad bacteria or viruses can multiply rapidly and cause havoc. If this happens with larger organisms, it could be catastrophic.		
181	What environments might be best suited to asexual reproduction?	Stable and predictable environments.		
181	What organisms produce through asexual means?	Sample answer: Bacteria, yeasts, fungi, some plants and some animals.	https://www.biologyonline.com/dictionary/asexual-reproduction	
181	Do you think asexual reproduction is an advantage or disadvantage to the organism? Why?	Sample answer: It is an advantage because reproduction is fast and easy and does not require a mate. It is less costly in terms of energy use. It is a disadvantage because it has low genetic variation and may not survive in hostile environments.		
182	Can a new plant start form a cutting of a stem?	Yes.		
182	How does root hormone affect mitosis division?	It speeds the process up and causes roots to form more quickly.		
182	How do different doses of root enhancer affect plant growth?	Sample answer: In most cases it speeds up plant growth, but too strong of a dose and damage the plant.		
183	How does this description correspond to the production of gametes?	*Cell division in meiosis divides the chromosomes in half, resulting in a decrease of the gametes involved in reproduction.		
183	How is fertilization the same in plants and animals that reproduce sexually?	*In both cases, the male sex cells and female sex eggs unite.		
183	How does a bee get this pollen on its body?	*By brushing up against flowers.		

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183	How can you scientifically show asexual reproduction?	*Sample answer: Asexual reproduction can be shown by propagating plants by stem or leaf cuttings, from bulbs, rhizomes, runners, or by grafting.		
183	What factors aid pollination?	Insects, such as bees; wind, water, animals.	https://www.fs.fed.us/wildflowers/pollinators/Plant_Strategies/index.shtml	
183	What happens to a flower after pollination?	Seeds are developed. Fruits are produced.		
183	Will the plants that result still have diversity?	Yes.		
184	How do you represent genes from your mother and your father?	*Sample answer: traits might include height, weight, facial features, eye and hair color, and the shape of your toes and the length of fingers.		
184	What is the benefit of diversity for humans?	*Diversity provides enough genetic variability to ensure that each individual is unique.		
184	During the transition through adolescence, how does the body change?	*If your students are comfortable enough, you could ask them to work in pairs to determine the changes they know will occur to male and female bodies. Note:		
184	What are the advantages of sexual reproduction over asexual reproduction?	There is more diversity of individuals produced by sexual reproduction. New offspring have characteristics of both parents. There is more variation, and offspring can survive better since they can adapt to various environments.	https://byjus.com/questions/write-few-advantages-of-sexual-reproduction-over-asexual-reproduction/	
184	Name an organism that reproduces asexually and an organism that reproduces sexually?	*Sample answer: asexual hydra, sea star; sexual, all flower plants and most animals.		
184	You determine that a human cell has only 23 chromosomes. What do you know about this cell?	*It has half the number of chromosomes as body cells, so it must be a sex cell.		
184	What are some ways sexual reproduction increases genetic variability compared to asexual reproduction?	*Sample answer: Asexual reproduction produces offspring with the same genetic make up as the parent. During sexual reproduction, both parents supply genetic material. The offspring has a different genetic make-up than the parents.		
184	During transition through adolescence, how does the body change?	Your body develops sexually, boys produce sperm and girls produce eggs. Other physical changes occur, development of breasts, voice changes. Note: As a teacher you may want to consider how this will work best in your classroom.		
185	What is the primary purpose of testosterone in males?	*It develops the male sex organs and sperm that are essential in reproduction. It can also affect secondary sex characteristics like deepening of voice, beard growth, and muscle growth.		
185	What is the primary purpose of estrogen in females?	*It aids in the development of the sex organs and produces eggs in females which are essential in reproduction. It can also affect secondary sex characteristics like breast development and widening of hips.		

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185	What is the endocrine system in charge of in your body?	*It is in charge of body processes over time, such as the growth of cells		
185	How are hormones like traffic signals?	*Sample answer: Hormones are the body's way of sending out chemical messages to different parts of the body. Many hormones move throughout the bloodstream, yet each hormone only impacts certain cells. Hormones are like traffic signals because they tell our bodies what to do and when.		
185	Why are the changes of puberty necessary?	Puberty prepares the body to develop sexually and produce offspring.		
185	Why might you feel you are living in a new body during puberty?	Sample answer: The body is changing as the sex characteristics develop and there are many new hormones that are released at this time which cause different feeling to be experience.		
185	How are hormones like traffic signals?	Hormones are chemicals that transfer information from one set of cells to another, signaling them to initiate body changes.	Page 185.	
185	How does the pituitary gland know when to release hormones that initiate puberty?	When the hypothalamus in the brain releases the gonadotrophin releasing hormone, it stimulates the pituitary gland to release puberty-initiating hormones.	https://www.bbc.co.uk/science/humanbody/body/articles/lifecycle/teenagers/sexual_change.s.shtml#:~:text=The%20trigger%20for%20puberty%20in,and%20Luteinizing%20Hormone%20(LH).	
185	What are additional secondary sex characteristics in males?	Voice deepens, growth of facial and body hair, broad shoulders, Adam's apple.		
185	What is the benefit of secondary sex characteristics in females?	They prepare her for reproduction and carrying a baby in the uterus as it develops, giving birth, and breast-feeding her baby.		
185	Why do female's hips widen as she matures?	So it is easier for the baby to pass through the pelvis as it is born.		
186	How might some species use secondary sex characteristics to benefit reproduction?	*Some species may use secondary sex characteristics to emphasize their attractiveness to members of the opposite sex.		
186	What are the primary sex characteristics in the human male?	*The testes, penis, scrotum, and vas deferens, all of which directly aid in the transmission of sperm to the female.		
186	What are the primary sex characteristics in a human female?	*The ovaries, fallopian tubes, uterus, and vagina, all of which allow females to bear children.		
186	How do the stages of development of your animal compare to those of humans?	*Sample answer: Larger animals have longer periods toward sexual development than smaller animals.		
186	What might be sex characteristics in plants?	Sample answer: The production of pollen in male plants and the production of fruit in female plants.		

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186	Why do you think it may be important to have secondary sex characteristics that are not involved in reproduction?	Sample answer: Secondary sex characteristics support the activities of the adult male and female in their respective roles.		
186	What might be the primary sex characteristic in a cactus?	Sample answer: The stamen (male) and the pistil (female) in the flower.		
186	What are the secondary sex characteristics of a platypus, a cow, or a silverback gorilla?	Sample answer: Platypus - large size and venom in males; Cow - females have udders, males lack udders, males have visibly larger and heavier bodies than females.; Silverback gorilla - female gorillas are generally smaller than males, all male gorillas become silverbacks.		
187	If you grew ten cm a year for five years, how much taller would you be?	*You would be 50 cm taller.		
187	What does the term <i>antiperspirant</i> mean?	*Anti means "not" and perspirant refers to the word perspire. Antiperspirants help reduce the amount you perspire or sweat.		
187	How might make-up affect the pores in your skin?	*It may combine with the excess oil to clog the pores, leading to pimples and other problems.		
187	What advice can you give her?	*Keeping her skin clean will help reduce pimples. She could ask her doctor or help if needed.		
187	Have you noticed your friends and classmates suddenly getting taller?	Sample answer: Yes.		
187	What are some ways you can help minimize awkwardness as your body changes?	Sample answer: Knowledge that this happens prepares yourself mentally for this. Eventually your body will adjust to its new size and shape.		
187	Why might sweat odor increase during puberty?	Puberty causes adolescents to perspire more. If they don't bath or shower on a regular basis, odor may result.		
187	How do you think the fluctuation in hormones affects how you feel?	You will have mood swings.		