

### Follow-up Discussion

The most important part of this segment is to examine both the facts and beliefs generated by the class in their "Everything We Know About..." list. Research indicates that students will retain their previous misconceptions — in preference to the new information — until they actively recognize and correct their own errors. Because of this, it is important to lead students to the correct ideas while identifying and correcting any misconceptions from the class list. After reviewing the list, encourage students to share the answers they got to the questions raised, before viewing the program.

Raising a thought-provoking question is a good way to assess the overall depth of student understanding. A couple of suggestions are listed below:

- Is it true that all animals look like their parents? Explain.
- Why do you think there are celebrations that occur when a person goes from childhood to adolescence?
- How do people change as they grow?

### Follow-up Activities

- Creating a "family portrait" in words, photos, illustrations and a time line is a creative way of showing the stages of the human life cycle. Have students name and describe the specific members of their extended family who fit into each of the stages.
- Have students brainstorm as many cycles as they can, explaining why each is a cycle. Then build upon a few of them with classroom observation. Some suggestions could be a butterfly garden study showing the cycle from egg, to pupa, to butterfly, back to egg, a mealworm to meal bug cycle and the water cycle.
- Planting seeds in the classroom and observing their growth into plants that produce seeds is an excellent way to demonstrate a life cycle. Have students relate the plant life cycle to the human life cycle.
- Have students research the life span of different animals, including humans. Integrate this into a math lesson by creating line or bar graphs summarizing this data.
- Have students create a new species of animal accompanied by illustrations and text describing the life cycle of the animal, along with its appearance and that of its parents.

### Suggested Internet Resources

Periodically, Internet Resources are updated on our web site at [www.LibraryVideo.com](http://www.LibraryVideo.com)

- [www.enchantedlearning.com/subjects/butterfly/lifecycle/index.shtml](http://www.enchantedlearning.com/subjects/butterfly/lifecycle/index.shtml)  
This Web site explains the metamorphosis of a butterfly, featuring descriptions of each stage in the life cycle of particular butterflies in addition to information about their life spans. A butterfly life cycle printout is available for use in the classroom.
- [www.kidshealth.org/misc\\_pages/mybody\\_LP.html](http://www.kidshealth.org/misc_pages/mybody_LP.html)  
The "KidsHealth" Web site developed by the Nemours Foundation is an interactive journey through the human body.

### Suggested Print Resources

- Bampton, Claire. *Zoomers: Your Amazing Body*. Reader's Digest Children's Publishing, New York, NY; 1998.
- Kalman, Bobbie. *What Is a Life Cycle? (Science of Living Things)*. Crabtree Publishing, New York, NY; 1998.
- Cole, Joanna. *The New Baby at Your House*. Mulberry Books, New York, NY; 1999.

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## All About the Human Life Cycle

Grades K-4

This guide is a supplement, designed for educators to use when presenting this program in an instructional setting.

**Before Viewing:** Research in learning suggests that it is important for the teacher to discover what the students know — or think they know — about a topic, at the start of a new unit, so that their accurate conceptions can be validated and reinforced, and their misconceptions identified and corrected. Therefore, after reviewing the pre-viewing discussion questions provided for your class, create an "Everything We Know About..." list. Preview key vocabulary words and have students raise additional questions they hope will be answered by this program. Most importantly, students should be told that as "science detectives" they must listen closely, so that after viewing the program, they will be able to tell whether or not the facts/beliefs they put on their list were scientifically accurate.

**After Viewing:** After a brief discussion about the program, challenge your "science detectives" to prove or disprove the accuracy of the facts they put on their "Everything We Know About..." list. Discuss what else they learned and use the followup questions and activities to inspire further discussion. Encourage students to research the topic further with the Internet and reading resources provided.

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## Program Summary

Though all individuals are unique, we all share the experience of the human life cycle. As in any cycle (such as night and day, and the seasons of the year), there is a repeating pattern of events. The human life cycle repeats itself in stages: birth, infancy, childhood, adolescence and adulthood. All living things move from one life stage to the next, a pattern that is repeated, generation after generation.

**Birth** is the first stage. Before birth, a person begins as a single cell, the tiniest building block of life. As the human cells duplicate and specialize into specific body parts, they prepare for the birth of an infant, weighing five to ten pounds, which takes about 40 weeks from the time that that first cell starts growing.

**Infancy** is the second stage. From birth through the first year of life, a person is called an infant. The infant is totally dependent upon his or her parents for food, changing, bathing and movement from place to place. This is a stage in which a person begins to learn lots of things about survival in the world.

**Childhood** is the third stage, which lasts for about ten years. For the first two years after infancy, the child is called a toddler. **Toddlers** learn how to walk, talk and become more independent. For the balance of childhood, people grow, gaining more freedom and responsibility as they learn about themselves.

**Adolescence** is the fourth stage, roughly from age 12 to 18 years. In this stage, starting with puberty, boys change and become men, and girls become women. This can be a very confusing time for a young person, trying to cope with so many changes. This is the time that the human is preparing for adulthood, growing to his/her maximum size, and is physically able to reproduce.

**Adulthood** is the fifth stage, from the end of adolescence, usually age 18 to 20, to old age. Adulthood is the time that people take on many different kinds of responsibilities. All of the things that our parents once provided, we must now provide for ourselves. The life cycle usually starts over again during this stage, when, through reproduction, adults give birth to their own children. Once a person's children are grown up and are having children of their own, an adult can enter a more relaxing time of life, with freedom to pursue hobbies and travel. Though the body begins to break down during this stage, an adult can live to an average age of 76 in the U. S., and even longer in some other places in the world.

The human life cycle is much like a merry-go-round, spinning round and round, repeating the same cycle of stages, from one generation to the next.

## Vocabulary

The following words are included for teacher reference or for use with students. They are listed in the order in which they appear in the video.

**cycle** — A series of events or stages that happen one after another that lead back to a starting point, as in a circle; for example, the cycle of the seasons or the cycle of night and day.

**human life cycle** — The stages of growth and development throughout a person's life, spanning the time from birth to death.

**birth** — The first stage of the human life cycle, when the newborn infant comes out of its mother's body.

**cells** — The tiny, microscopic, building blocks of life, from which all living things are made; humans begin life as one cell and grow as one cell divides into trillions.

**infancy** — The second stage of the human life cycle, lasting about one year, when a person is almost totally helpless, but through the five senses, learns a lot about their environment.

**childhood** — The third stage of the human life cycle, lasting about ten years to age 11 or 12.

**toddler stage** — The earliest part of childhood, lasting from ages 1 to 3, during which time the child learns to become more independent, more active and to begin to learn the difference between right and wrong.

**adolescence** — The fourth stage of the human life cycle, lasting from about age 12 to 18; a confusing time when a person undergoes many physical, emotional and intellectual changes, and is preparing for adulthood.

**puberty** — The earliest part of adolescence, when boys and girls are physically able to reproduce and begin to show the adult characteristics of their gender.

**adulthood** — The fifth stage of the human life cycle, lasting from the end of adolescence through old age, when people must assume many responsibilities, become more independent, and may start their own family.

**old age** — The last part of adulthood.

## Pre-viewing Discussion

Before students generate their list of "Everything We Know About..." this topic, stimulate and focus their thinking by raising these questions so that their list will better reflect the key ideas in this show:

- What changes will you go through in your life as you grow up?
- When does a person begin to walk, talk and become more independent?

*(Continued)*

- What do you think it means when someone is said to have reached puberty?
- At what age do you become an adult?

After the class has completed their "Everything We Know About..." list, ask them what other questions they have that they hope will be answered during this program. Have students listen closely to learn if everything on their class list is accurate and to hear if any of their own questions are answered.

## Focus Questions

1. What is a cycle? Name a few examples.
2. Using a plant as an example, explain what happens over the cycle of the four seasons (spring, summer, autumn and winter)?
3. Name all the stages of the human life cycle.
4. How big do all humans start out, about 40 weeks before birth?
5. How does one cell, the size of a grain of sand, turn into an infant?
6. How long does the human stage of infancy last? What is it like?
7. What happens during the toddler stage of childhood? How long does it last?
8. What changes did you go through in your life as you changed from a toddler into a child?
9. During the eight to ten years of the childhood stage, what is happening?
10. What do you think you should know and be able to do by the end of your childhood stage?
11. What happens to the human boy or girl during puberty?
12. Adolescence stretches from the end of childhood, and the beginning of puberty, to adulthood. What physical, emotional and mental things are supposed to happen during these eight to ten years?
13. Why do you think that adolescence is known as a confusing time for the human?
14. Why do we say that adulthood starts the cycle all over again?
15. What qualities and traits do adults have that children do not usually have?
16. Old age can last a long time. Why can this be both a happy time and a difficult time?
17. What is the typical human life span?
18. Why is the human life cycle like a merry-go-round?