Lesson Title: The Developing Child

Grade Levels: 9-12

Time Allotment: Two 45-minute class periods

Overview: In this lesson, students learn about the changes that occur in children as they grow. In the Introductory Activity, students brainstorm and use online resources to explore the stages of development children go through from birth to age five. In the Learning Activity, students explore video segments from the PBS program ***The Human Spark*** to learn about brain growth, language development and how children's views of right and wrong can be shaped by others. In the Culminating Activity, students reflect upon their own process of development and how they acquired their skills and knowledge.

Subject Matter: Science; Psychology; Child Development

Learning Objectives:
Students will be able to:
- Describe important child development milestones from birth to age five.
- Discuss the developing human brain.
- Describe how the development of humans compares to that of animals and discuss the role of language in children's development.
- Explain how authority figures can influence children's perceptions of right and wrong.
- Discuss what has shaped their own skills and knowledge.

Standards:

National Standards for High School Psychology Curricula
http://www.apa.org/education/k12/national-standards.aspx

Standard Area IIIA: Lifespan Development
Content Standards
After concluding this unit, students understand:

- **CONTENT STANDARD IIIA-1: Development as a lifelong process**
  Students are able to (performance standards):
  - **IIIA-1.1 Describe physical, social, and cognitive changes from the prenatal period throughout the lifespan.** Students may indicate this by (performance indicators): a. Illustrating developmental changes in physical, cognitive, and social development
    b. Describing research on child development; c. Hypothesizing on the interaction of physical, cognitive, and/or social changes in behavior; d. Inferring how peer

relationships change over time; e. Describing similarities and differences in development across cultures; f. Discussing the relative importance of peers' versus parents' influence in different cultural groups; g. Examining the role of psychology in enhancing the life of older adults.

- **IIIA-1.3 Identify the complex cognitive structures found in the early development of infants and young children.** Students may indicate this by (performance indicators): a. Citing research on the capabilities of infants and young children; b. Comparing contemporary research on early views of infant capabilities with current understanding; c. Discussing the role of the caregiver in promoting child development; d. Explaining how cultural practices in child-rearing may influence cognitive development.
- **IIIA-1.4 Apply lifespan principles to personal experience.** Students may indicate this by (performance indicators): a. Comparing their own life experiences with general patterns of others from their generation; b. Predicting their own developmental changes over time; c. Describing transition from childhood to adolescence; d. Explaining the transition from adolescence to adulthood; e. Projecting themselves into late life adulthood (i.e., post 65)

- **CONTENT STANDARD IIIA-4: Issues surrounding the developmental process (nature/nurture, continuity/discontinuity, stability/instability, critical periods)**
  Students are able to (performance standards):
  - **IIIA-4.1 Describe the role of critical periods in development.** Students may indicate this by (performance indicators): a. Giving an example of a critical period in development; b. Evaluating significance of critical periods in development; c. Explaining difficulties of research in the area of critical periods; d. Linking cortical development to enriched environments during critical periods.
  - **IIIA-4.2 Explain the issues of continuity/discontinuity and stability/instability in development.** Students may indicate this by (performance indicators): a. Giving an example to illustrate continuity or discontinuity in development; b. Citing research concerning stability or instability of traits over time;

New York State Standards:
http://www.p12.nysed.gov/sss/schoolhealth/schoolhealtheducation/healthPEFACSLearningStandards.pdf
Learning Standards for Health, Physical Education, and Family and Consumer Sciences
Students will know the basic principles of home and community safety. They can demonstrate the skills necessary to maintain their homes and workplaces in a safe and

comfortable condition. They can provide a safe and nurturing environment for themselves and others.

- Students understand the stages of child development and apply this knowledge to activities designed to enrich the physical, social, mental, and emotional development of a young child. This is evident, for example, when students: plan a daily program of balanced activity for preschoolers based on knowledge and understanding of patterns of child growth and development; describe effective ways of promoting positive behavior in children; identify characteristics of a safe and nurturing home and work environment.

Media Resources

***The Human Spark*,** selected segments

- The Developing Brain
  A look at how the human brain develops throughout a person's life.

- Language Development
  An overview of how human language develops.

- Learning Right and Wrong
  A look at how a child's views of what is right and wrong can be shaped by others.

Websites:

- **Child Development and Parenting**
  www.cdc.gov/ncbddd/jump/child.html
  This section of the CDC's National Center on Birth Defects and Developmental Disabilities Website provides information about child development, including the following:
  - **The Milestones Quiz** (www.cdc.gov/ncbddd/actearly/index.html) This interactive quiz highlights developmental milestones.
  - **Developmental Milestones** (www.cdc.gov/ncbddd/actearly/milestones/index.html) This section has fact sheets about developmental milestones from birth through age five.
  - **Milestones Chart** (www.cdc.gov/ncbddd/actearly/interactive/milestones/social_index.html) This interactive chart provides details about developmental milestones through age five.

- **Development Timeline**
  http://wps.ablongman.com/ab_fabes_exploring_2/3/885/226578.cw/index.html
  This site features a child development timeline, which students can use in the Introductory Activity.

Materials

For the class:

- Computers with internet access
- Computer, projection screen and speakers (for class viewing of online/downloaded video segments)
- "Child Development Milestones" handout. *Optional.* (See "Before the Lesson" for details.)
- Printouts of the following "Important Milestones" fact sheets from the CDC website. (*Note: Print out enough copies so that each group of 2-3 students has one of the seven fact sheets. If possible, when conducting this lesson's Introductory Activity, divide the class into at least seven groups before assigning these fact sheets so that each of the fact sheets can be distributed to at least one group. For example, at least one group should receive the "end of 3 months" fact sheet, at least one should receive the "end of 7 months" fact sheet, etc. It is fine if more than one group gets the same fact sheet. Instead of making printouts, you can have students access the information directly on the Web.)*

  Important Milestones Fact Sheets from www.cdc.gov:

  - **Important Milestones by the End of 3 Months**
    www.cdc.gov/ncbddd/actearly/pdf/parents_pdfs/3MonthMilestonesFactShe.pdf
  - **Important Milestones by the end of 7 Months**
    www.cdc.gov/ncbddd/actearly/pdf/parents_pdfs/7Month.pdf
  - **Important Milestones by the end of 1 Year (12 Months)**
    www.cdc.gov/ncbddd/actearly/pdf/parents_pdfs/12MonthMilestonesFactSh.pdf
  - **Important Milestones by the End of 2 Years (24 Months)**
    www.cdc.gov/ncbddd/actearly/pdf/parents_pdfs/24MonthMilestonesFactSh.pdf
  - **Important Milestones by the End of 3 Years (36 months)**
    www.cdc.gov/ncbddd/actearly/pdf/parents_pdfs/3Year.pdf
  - **Important Milestones by the End of 4 Years (48 months)**
    www.cdc.gov/ncbddd/actearly/pdf/parents_pdfs/4Year.pdf
  - **Important Milestones by the End of 5 Years (60 months)**
    www.cdc.gov/ncbddd/actearly/pdf/parents_pdfs/5Year.pdf

Before the Lesson

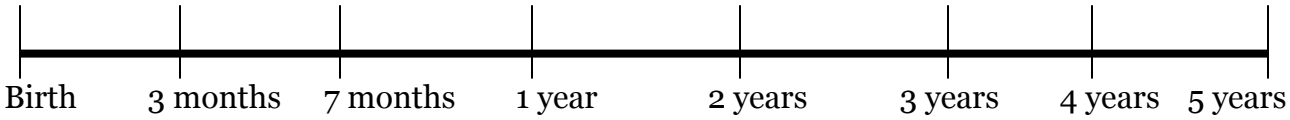
Prior to teaching this lesson, you will need to:

Optional: Print out the "Child Development Milestones" handout and cut out each item along the dashed lines. Make enough copies so that each pair of students has at least one item on the sheet. (There are 33 items on the sheet.) This handout can be used in the Introductory Activity.

Print out the "Important Milestones" fact sheets from the CDC website. (See the Materials section for details.) Print out enough so that each group of 2-3 students has one fact sheet.

Note: Instead of printing out the sheets, you can have students access this information on the Web.

Create a timeline in the classroom with the following points marked off:



Leave enough space between each of the points on the timeline, so that students can affix their "Child Development Milestones" strips of paper in the appropriate spots.

Preview all of the video segments and websites used in the lesson.

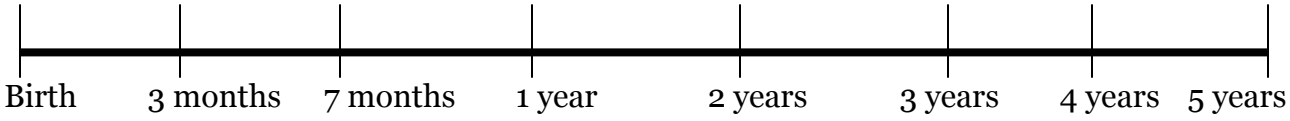
Download the video clips used in the lesson to your classroom computer(s) or prepare to watch them using your classroom's Internet connection.

Bookmark all websites which you plan to use in the lesson on each computer in your classroom. Using a social bookmarking tool such as delicious or diigo (or an online bookmarking utility such as portaportal) will allow you to save the links in one location.

Introductory Activity

1. Explain that today's lesson explores child development, the biological and psychological changes that occur in children as they grow.

2. Display your timeline (birth to 5 years) in the room. (See "Before the Lesson" for details.)



3. Ask students to brainstorm different things that children do at different stages in their development. Write each item down on a separate strip of paper. For additional items, use the items on the "Child Development Milestones" handout.

4. Hand students the strips of paper with the events that they brainstormed. *Optional:* Also hand students the items from the "Child Development Milestones" handout.

5. Ask students to place the events on the timeline. Encourage students to discuss and debate where the events should go.

6. Use the chart below for a general guideline of where events from the "Child Development Milestones" handout could be placed along the timeline. (This information is based on information from the CDC website.)

Important Milestones by the end of…

3 months	7 months	1 year
o begins to babble o brings hand to mouth o first smile	o babbles chains of sounds o can tell emotions by tone of voice o develops full color vision o responds to own name o transfers object from hand to hand	o bangs two objects together o crawls forward on belly o cries when parent leaves o finds objects even when hidden under two or three covers o finger feeds him/herself o reaches sitting position without help o responds to "no" o says "dada" and "mama" o walks holding on to furniture

2 years	3 years	4 years	5 years
o begins make-believe play o begins to run o begins to show defiant behavior o begins to sort by shapes and colors o says 2-4 word sentences o turns over container to pour out contents o walks alone o walks up and down stairs holding on to support	o can ride a tricycle o expresses affection openly o sorts objects by shape and color	o cooperates with other children o uses scissors o walks up and down stairs without support	o dresses and undresses without help o uses a fork, spoon and (sometimes) a knife to eat

7. Discuss the developmental milestones listed on the timeline. During the discussion, explain that children develop at different rates and there is a wide range of what is considered to be "normal" development. Even though a milestone might be listed as happening by a certain age on the timeline, that event could occur earlier or later depending on the child and still be considered part of healthy development. Something that is worth pointing out to your students is, in general, children will be able to perform the tasks listed in the 3 month category before they can do the tasks in the 7 month category and will be able to perform the tasks in the 7 month category before they perform the tasks in the 1 year category. For example, a child will "begin to babble" before he/she is able to "babble chains of sounds," which he/she will be probably do before saying "mama" or "dada."

8. Ask students to work in pairs and explore the "important milestones" information on the CDC website: www.cdc.gov/ncbddd/actearly/milestones/index.html. Either have students access the information directly on the Web or hand out printouts of the milestone fact sheets to students. (Hand out one fact sheet for each group of 2-3

students.) See the "Materials" section for details and to download the fact sheets. Assign students to the following 7 groups:
   - 3 months
   - 7 months
   - 1 year
   - 2 years
   - 3 years
   - 4 years
   - 5 years

   Students can also refer to the following Development Timeline for more information: http://wps.ablongman.com/ab_fabes_exploring_2/3/885/226578.cw/index.html

9. Ask students to explore the important milestones that occur in their assigned age group. Ask each group to summarize their findings and present the information to the group.

10. After the groups have shared their findings, review the timeline with students and ask students to rearrange and/or add items to the timeline, based on the new information they have just learned. If there are still items from their brainstormed list that they are not sure where to place on the timeline, ask the students to conduct additional resource to find out the information.

Learning Activity

1. Ask students to hypothesize when most of the growth of a person's brain happens- before birth or after birth?

2. Let students know that they will be watching a video segment from the PBS program, ***The Human Spark***, which explores how the human brain develops.

3. Play The Developing Brain. After playing the segment, ask the students to discuss whether most brain growth occurs before or after birth *(After birth.)*

4. Ask students to think about how they think the knowledge of human infants compares with that of other animals.

5. Play Language Development. After playing the segment, ask students what Harvard Psychologist Elizabeth Spelke believes about how the abilities of human infants compare to that of other animals. *(She believes they are very similar.)* Ask students if they agree or disagree with her.

6. Ask students to discuss what Dr. Spelke says is responsible for the development of uniquely human abilities. (*Language. She believes that once children begin to learn and use language they begin to display uniquely human capacities.*)

7. Discuss the statement by Professor Helen Neville at the University of Oregon that children first learn nouns and then learn verbs. Ask students why that might be. *(Possible answers: Nouns are things that children can see, touch and/or look at, while verbs are more abstract.)*

8. Ask students to discuss how they think children learn right from wrong. *(Possible answers: From their friends, parents and other authority figures, from television, through punishment for doing something wrong and rewards for doing something good, etc.)*

9. Play Learning Right and Wrong. After showing the video, ask students to discuss what can influence a child's perception of what is right and what is wrong. (*Children can be influenced by their peers, parents and others.)*

10. Discuss how the boy in the segment reacts when he witnesses the polar bear doing something incorrectly. (*He tries to stop him and tells him the "right" way to do it.)*

11. Ask students to discuss how the researcher influenced the girl about how to access the die. (*For the first task, when the girl didn't know how to remove the object, she waited for the researcher to show her and then used the method demonstrated by the researcher. For the second task, the girl was successfully able to remove the die using one method. However, when the researcher demonstrated another technique, the girl then copied that method on her next attempt to remove the die.)*

12. What are some questions that this segment makes you think about. (*Possible questions: How easily are children influenced by those around them? Does their ability to be influenced by others change as they age? Do the people who have the most influence on them change over the years? For example, are they influenced more by adults when they are younger and more by peers when they age?)*

Culminating Activity

1. Let students know that you want them to think about their skills and beliefs and how they acquired them. Ask students to think about and discuss the following:
   - A special skill or talent they have and how they acquired that skill or talent.
   - A core value or belief and how they acquired that belief.
   - The role that others (such as peers, parents, teachers, siblings, politicians, community leaders, etc.) play in helping them make decisions and form opinions.

2. Ask students to think about the languages that they speak fluently. Ask them how they learned those languages.

3. Ask students to think about something they learned to do in the past year (drive a car, cook a meal, etc.) and to describe how/ where they learned it. Ask students to write

down their responses and then share their answers with the class.

4. Use the responses from questions 1, 2 and 3 above as a springboard to discuss the different ways the students have learned things throughout their lives (in school, at home and in the community). During the discussion, talk about the different things (events, places, books/media, peers, parents, teachers, etc.) which have helped to shape their thoughts and actions.

Child Development Milestones

Cut out the boxes below along the dotted lines. Try to place each item in the correct spot in the timeline used in the Introductory Activity for "The Developing Child" lesson for ***The Human Spark.***

babbles chains of sounds	cries when parent leaves	says 2 to 4-word sentences
bangs two objects together	crawls forward on belly	says "dada" and "mama"
begins make-believe play	develops full color vision	sorts objects by shape and color
begins to babble	dresses and undresses without help	transfers object from hand to hand
begins to run	expresses affection openly	turns over container to pour out contents
begins to show defiant behavior	finds objects even when hidden under 2 or 3 covers	uses a fork, spoon and (sometimes) a knife to eat
begins to sort by shapes and colors	finger feeds him/herself	uses scissors
brings hand to mouth	first smile	walks alone
can ride a tricycle	reaches sitting position without help	walks holding on to furniture
can tell emotions by tone of voice	responds to "no"	walks up and down stairs holding on to support
cooperates with other children	responds to own name	walks up and down stairs without support