



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute  
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## **The Physiological and Psychological Development of the Adolescent**

Curriculum Unit 91.05.07  
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“The Physiological and Psychological Development of the Adolescent” is a curriculum unit designed to explain the life of the adolescent from two perspectives. Once viewed, the adult will be able to understand the reasoning behind the child’s sudden changes in behavior. In turn, they will be more readily available to offer help to youth during this phase of life when adolescents are attempting to identify and formulate their self-image, values, and ideals along with gaining independence from their parents or guardians.

This curriculum unit is geared towards the middle school grades of 6-8, where most children enter adolescence. For students to take full advantage of the information included in the unit, three to four weeks should be set aside to teach the unit in its entirety.

The lesson plans at the end of the physiological portion of paper will focus on the biological occurrences in the adolescent’s life. Even though the vocabulary may appear to be difficult, children will tend to learn the words rapidly because of the direct involvement and interest in the unit of study. After using the lesson plans supplied at the end of the unit the students should attain the following objectives:

1. Identify, using a diagram, the body parts directly related to reproduction.
2. Differentiate between primary and secondary sexual characteristics.
3. Identify, using proper terminology, the body parts directly related to reproduction.
4. Place the steps involved in adolescent sexual maturation in sequential order.
5. Describe the function of reproductive organs in both males and females.

*(figure available in print form)*

The lesson plans at the end of the psychological section of the paper will provide the students with activities that will help them to focus on establishing their identity and evaluate their personalities. Through the information provided in the text and worksheets provided in the lesson plan section, the student will:

1. Explore occupations, and discuss the role of academics in relationship to their aspiring vocations.
2. Perform activities to define their identity and personalities.

3. Perform activities to establish their values and strengthen decision-making skills.
4. Discuss Kohlberg's theory of Moral Reasoning.
5. Discuss Piaget's theory of Cognitive Development.

## **THE PHYSIOLOGICAL DEVELOPMENT OF THE ADOLESCENT**

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### **Introduction**

In trying to discuss adolescence, most adults tend to confuse the terms adolescence and puberty, and use them synonymously. However, puberty refers to the physiological changes involved in the sexual maturation of a child, as well as other body changes that may occur during this period of time. Adolescence refers to the stage from puberty to adulthood, and includes the psychological experiences of the child during this period. Adolescence is described as being the teenage years from thirteen to eighteen years of age; however, puberty decides the onset of adolescence. Therefore, adolescence occurs in some children as early as nine years of age. During this period of time the child has a great deal of concern over his/her body image and any discrepancies in the child's eye such as obesity, early or late maturation, etc., may be manifested through a variety of disorders.

During adolescence there is a large degree of psychological growth as children make adjustments in their personality due to the rapid physical and sexual development which are characteristic of this period of life. Adolescents face ongoing conflict and difficulty adapting to the sudden upsurge of sexual and aggressive drives. These changes cause unrest and confusion in the adolescents' inner selves and in the way they perceive the world.

### **What is Puberty?**

Puberty refers to the physiological changes that the adolescent undergoes in order to reach sexual maturity. It is best characterized as the gradual onset of mature reproductive hormonal activity, triggered by the central nervous system, mainly the hypothalamus and pituitary gland. Most people look at puberty in three distinct stages called the pre-pubescent, pubescent, and postpubescent. The prepubescent stage includes the first evidence of sexual maturation—primary sexual characteristics—and terminates at the first appearance of pubic hair. During this stage, reproduction is virtually impossible. During the pubescent stage the growth spurt begins to accelerate, males experience their first emission of semen usually in the form of "wet dreams," and menarche occurs in the females. The postpubescent stage is characterized by the deceleration of growth spurt, completion of both primary and sexual characteristics, and fertility is possible.

### **The Anatomical Development of the Adolescent**

Adolescent growth first centers on the extremities—the legs and arms during the early stages of adolescence. Changes also occur in the facial configurations of both sexes. The lower portion of the head begins to grow because the chin lengthens and the nose grows in width and/or length. Additional changes in proportion of the face is accredited to changes in tissue distribution. Even though both sexes undergo this change, within females a layer of subcutaneous fat develops which causes the rounding and softening of contours of the face and body. Whereas, the male subcutaneous fat development is much less pronounced, but the development

of muscles and bones in the face is clearly seen. This gives the males a leaner and more angular face than the females.

Changes also occur on the surface of the body in both sexes. The most observable change is the growth on body hair, both pubic and axillary (armpit). The development of pubic hair is the first sign of a child ending the prepubescent stage and entering the pubescent stage. This process begins about the same time as the growth spurt begins, and is in the form of slightly coarse, straight hairs that grow at the base of the penis and on the labia majora. The growth of pubic hair continues throughout adolescence, it spreads horizontally and then vertically until it surrounds the genital areas. Characteristically, pubic hair becomes longer, thicker, darker and kinkier as it spreads over the genital areas. In males, the growth of facial and chest hair may be pronounced, and tends to represent virility in the eyes of the adolescent. Noticeable chest hair, with a thickness in texture does not usually appear until the postpubescent stage and continues to grow during manhood. Facial hair usually appears in the form of a dark shadow above the lip. Then it appears on the chin, along the jaw line, and then develops along the neck. Females may also find small amounts of facial and chest hair.

Both male and female skin undergoes other changes, such as becoming coarser with the sebaceous glands becoming more active, producing oily secretions which usually help cause acne or blackheads. Sweat usually causes an odor in adolescents because the chemistry and composition of sweat is altered by the oils that the sebaceous glands emit. Adolescents also show an increase in their blood pressure, and a decrease in both basal metabolic rate—the rate at which the body in a resting state (basal) consumes oxygen—and in pulse rate.

### **The Onset of Puberty in Adolescents**

Amazing as it may seem, sexual maturation is programmable for the primary sexual characteristics to begin their development, the pituitary gland must first release stimulating agents called gonadotropins into the bloodstream. Once they reach the testes in the male and the ovaries in the female, a number of changes will occur.

There are two gonadotropins: follicle stimulating hormone (FSH) and luteinizing hormone (LH). These gonadotropins are present in the adolescent during childhood, but at levels too low for sexual maturation to begin. At the beginning of puberty, the pituitary releases increased amounts of gonadotropins while the child is asleep and stops immediately after the child awakens. However, once the child enters the postpubescent stage, gonadotropins are released both during sleep and during the day. In the ovaries, follicle stimulating hormone is responsible for the development of the follicle which contains a developing ovum (egg). Follicle stimulating hormone also helps produce the female hormone estrogen within the follicle when it is stimulated by luteinizing hormone. In males, FSH incites the growth of seminiferous tubules, which produce sperm in the testes. Luteinizing hormone is responsible for producing androgen male hormone in the Leydig cells. The androgen that the Leydig cells produce, aids in the growth on the seminiferous tubules. As the adolescent grows older, the pituitary releases increased amounts of gonadotropins, ovaries and the testes grow more rapidly, and produce larger amounts of estrogen and/or androgen.

### **Sexual Maturation In the Male Adolescent**

Even though the male adolescent's growth rate varies from child to child, a sequential pattern has been identified. The typical sequence of events occurs as follows:

1. The testes and scrotum begin to increase in size.
2. Pubic hair begins to appear.
3. The penis begins to enlarge, and the adolescent growth spurt begins.
4. The larynx starts to grow and the voice deepens.
5. Hair growth begins on the upper lip.
6. Nocturnal emissions (ejaculation of semen during sleep) may occur as sperm production increases.
7. Pubic hair becomes pigmented, and growth spurt reaches its peak.
8. The prostate gland enlarges.
9. Hair growth begins in the axillas (armpits).
10. Sperm production becomes sufficient for fertility, and the growth rate decreases.
11. Physical strength is at its peak.

### **Sexual Maturation of the Female Adolescent**

Even though the female adolescent's growth rate varies from child to child, a sequential pattern has been identified. The typical sequence of events occur as follows:

1. The adolescent growth spurt begins.
2. Non-pigmented pubic hair (downy) appears.
3. The budding stage of development (breast elevation) and the rounding of the hip begins, accompanied by the beginning of downy axillary hair.
4. The uterus, vagina, labia and clitoris increase in size.
5. Pubic hair growth becomes rapid and is slightly pigmented.
6. Breast development advances, nipple pigmentation begins, and the areola increases in size.
6. Axillary hair becomes slightly pigmented.
7. Growth spurt reaches its peak, and then declines.
8. Menarche occurs.
9. Pubic hair development is completed, followed by mature breast development and completion of axillary hair development.
10. "Adolescent sterility" ends, and the girl becomes capable of conception.

### **Menstruation**

The menstrual cycle is controlled by the hypothalamus, which acts as a menstrual clock. The clock operates through the pituitary gland located at the base of the brain. The pituitary gland cyclically secretes two hormones which directly stimulate the ovary these hormones are follicle stimulating and luteinizing hormones.

As follicle stimulating and luteinizing hormones act on the follicle, its cells multiply causing a large fluid—filled cavity to form. The growth and activity of the follicular cells result in the secretion of estrogen by the cells, and this hormone is found in the fluid of the follicle.

Luteinizing hormones cause the cells of the follicle to rupture and expel the ovum. Then the fluids and cells

form a new structure called the corpus luteum. The corpus luteum is stimulated by the gonadotropins and initiate the production of the hormone, progesterone. Progesterone causes the lining of the uterus to change, thus getting it ready for the reception, embedding, and gestation of a fertilized ovum. The coordinated action of progesterone and estrogen makes the lining of the uterus an environment where an embryo can survive during pregnancy.

Menstruation occurs approximately every three to four weeks. If the ovum is not fertilized, most of the lining of the uterus mixed with blood is expelled through the cervix into the vagina. This bloody discharge is referred to as menstruation (menses) or a menstrual period. The entire cycle repeats itself with regularity throughout the reproductive life of the female. However, at its onset after puberty, menstruation may be irregular for up to a year or two.

## **THE PSYCHOLOGICAL DEVELOPMENT OF THE ADOLESCENT**

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Adolescent maturation is a personal phase of development where children have to establish their own beliefs, values, and what they want to accomplish out of life. Because adolescents constantly and realistically appraise themselves, they are often characterized as being extremely self-conscious. However, the self-evaluation process leads to the beginning of long-range goal setting, emotional and social independence, and the making of a mature adult.

Three distinct stages can be identified in the psychological development of the adolescent, even though there is a great deal of overlap in the stages, and they may not occur during the age span indicated. During early adolescence (ages 11-13), development usually centers around developing a new self-image due to their physiological changes. Adolescents need to make use of their newly acquired skills of logical thinking and ability to make judgments rationally. When they reach the ages of fourteen and fifteen (the period known as mid-adolescence), adolescents strive to loosen their ties to their parents and their emotions and intellectual capacities increase. The adolescent becomes adventuresome, and experiments with different ideas. This plays an important role in finding one's relations to oneself, groups, and opposite sex. During this time, the adolescent battles over his own set of values versus the set established by parents and other adult figures. The adolescent also begins to take on more control of educational and vocational pursuits and advantages. It is during this time that adolescents' self-dependence and a sense of responsibility become apparent, along with their quest to contribute to society and find their place in it.

During late adolescence (ages range from sixteen on), adolescents have a more stable sense of their identity and place in society. At this stage in life they should feel psychologically integrated and should have a fairly consistent view of the outside world. Adolescent should, by this time, have established a balance between their aspirations, fantasies, and reality. In order for them to achieve this balance they should be displaying concern for others through giving and caring, instead of the earlier childhood pattern of self-gratification. At the conclusion of late adolescence they should have had designed or discovered their role in society, have set a realistic goal in life, and have begun in earnest to achieve it.

### **Using Developmental Psychology To Understand the Adolescent**

Explaining the psychological development of adolescent is difficult due to the lack of empirical research and the great variety of adolescent behavioral modes. However, developmental psychologists have formulated

theories describing human psychological development which are useful in understanding adolescents. They demonstrate sequential patterns of development and make some rough estimates about the ages at which they should demonstrate particular developmental characteristics. Because of the great benefits that developmental psychology offers both teachers and parents in suggesting ways to help children in our society, and its usefulness in identifying children who lack skills, I will conclude this section by exploring three significant theories to show how they characterize adolescent's development in the areas of cognition, moral reasoning, and establishing identity.

In developing lesson plans that utilize these theories, the teacher must find the overall level at which the class is functioning. For example, once Piaget's theory is reviewed, the teacher should develop lessons which will help the students move from the concrete level of thinking, to the formal operational stage. I have included two activities in which Piaget's theory is performed with a group of students. As you read the lesson plans based on Piaget's theory, it is the behavioral tasks that are important not the outcome. The more advanced the adolescents performing the experiment, the more systematically they will perform the task.

Upon completion of this exercise, teachers will discover the connection between Piaget's theory and Erickson's psychosocial theory. In order for the adolescent to develop a sense of industry (See Erickson's theory below for explanation), students must feel that they are academically successful in school. Therefore, when students complete "hands-on" academic tasks like those given by Piaget, they will feel good about themselves. Review of Erickson's theory below will stress to the teacher the critical importance of identity development within the adolescent. In the lesson plans provided in this curriculum unit you will find exercises that will help children critically think about their personalities and future vocation.

Another vital aspect of adolescent psychological development includes the evolution of values through moral reasoning. Lawrence Kohlberg's theory on moral development provides valuable insight into the evolution of moral reasoning within human beings. This theory provides educators a basis for understanding how this aspect of adolescent psychological development occurs and helps to categorize the level at which the adolescent reasons.

According to Kohlberg's theory, adolescence should be provided with hypothetical dilemmas where students can explore their feelings and openly discuss their viewpoints in choosing between conflictual situations. Through their discussions, adolescents become more aware of their power to make choices and decisions about their lives. Lesson plans reflecting this theory have been included which involve two hypothetical situations which help to guide adolescent moral reasoning through group discussion. The teacher's role in the lessons will be to act as a facilitator in encouraging the students to voice and accept opinions of others.

### **Piaget's Theory of Cognitive Development**

Jean Piaget dedicated most of his life's work to understanding how children develop intellectually. His work on cognitive development is the most complete theory available today and is widely used. (Pulaski, 1970) According to Piagetian theory, children progress through four stages in their cognitive development—seriomotor (birth to two years of age), pre-operational (2 to 7 years of age), concrete operational (7 to 11 years of age) and formal operational (11 to 15 years of age). Each of these stages represent a qualitative leap forward in the child's ability to solve problems and reason logically.

As children enter adolescence, their cognitive abilities lie somewhere between Piaget's third stage of cognitive development—the period of concrete operational—and the fourth, or last stage—formal operational. During the concrete operational stage, children begin to understand the concept of conservation. From the Piagetian

perspective, conservation means that children realize that quantities remain the same, even if they are placed in containers of different shapes and sizes. The adolescent also becomes less egocentric, that is, he now understands that everyone does not see things in the same way that he does. The adolescent also becomes capable of reasoning deductively, perform simple operations with physical objects, and apply logic to arrive at conclusions. Even though adolescents at the latter part of this stage display some cognitive maturity, they still are incapable of thinking abstractly. During this stage, things are understood concretely and literally. For example, you cannot say: “That was the straw that broke the camels back,” and expect the child to understand what you are talking about. Unrealistic math problems such as: if a dog has six legs, then how many legs will four dogs have, will result in a child arguing that a dog does not have six legs.

However, once the adolescent enters the last stage—formal operational he/she develops the ability to test hypotheses in a mature, scientific manner. They can communicate their position on complex ethical issues, and become capable of thinking abstractly. They can discuss abstract terms such as freedom or liberty without difficulty.

Although Piaget was not interested in formal teaching strategies, educators have applied Piagetian concepts to educate children. Examples of Piagetian theory being used in school includes: (1) using Piagetian tasks to determine the intellectual ability of students; (2) teaching students with cognitive levels in mind; (3) being careful to sequence instruction; (4) testing children to find the results of teaching; (5) encouraging social interaction to facilitate learning, and (6) remembering that children’s thought processes are not the same as adults.

### **Erik Erikson’s Psychosocial Theories**

Psychosocial theorists based the development of identity on the outcome of crises that occur during the life of a person. Psychosocial theorists define crises as times at which a person actively focuses on, and questions, aspects of his/her identity. Erickson’s psychosocial theory states that human beings develop according to a preset plan, the epigenetic principle, that consist of two main elements. First, personality develops according to a predetermined pattern that is maturationally set. Second, each society is structured to encourage challenges that arise during these times.

According to Erikson’s theory, individuals proceed through eight stages of development which begin at birth and conclude at death. If the particular crisis is handled appropriately, the outcome will be positive. If not, then a negative outcome will be the result. The two stages which involve conflicts that significantly affect early and late adolescent development are stage 4, the latency state (ages 6-11), and stage 5, puberty and adolescence (ages 12-18).

Stage four of Erikson’s theory occurs during the middle school years when children must master skills in math, reading, and writing. At that time the child is faced with the conflict of industry versus inferiority. If the child masters the skills, the child develops a sense of industry and has a positive view of the achievement. However, if a child doesn’t meet the expectations of mastering these skills and is constantly criticized, then he/she may develop a feeling of inferiority.

The fifth psychosocial stage occurs during the ages of 11-18. Adolescents begin to consider their futures and decide on careers. During this stage they face the conflict of identity versus role confusion. If the adolescent formulates a satisfying plan of action about his/her future, then the outcome is positive and establishment of identity is achieved. Adolescents who do not develop this sense of identity may develop “role confusion” and aimlessly move through life without any plan of action or sense of security about their future.

Erikson's theory demonstrates the importance of the educator's role in helping children establish their identity upon reaching adolescence. The child must master academic skills in order to feel positive about him/herself. In addition to monitoring skill mastery, the educator must cover the topic of career exploration, and expose the adolescence to as many career choices as possible. Should the adolescent show interest in a certain occupation, then exposure to the right vocational program or academic track is in order to help him/her successfully pursue a goal.

### **Kohlberg's Theory of Moral Reasoning**

Lawrence Kohlberg viewed development in terms of different levels of reasoning applied to choices people make in their lives. This type of moral reasoning occurs throughout a person's life and depends on an individual's social interaction. A person evolves from one level of reasoning to another as he/she is able to understand the higher level of reasoning and is able to experience in social interactions a conflict that implies then to accept the newer, higher-level values. Kohlberg viewed moral reasoning in three levels which included six sequential stages. Kohlberg perceived these stages as universal, that is, no stage is ever skipped, and applicable to all cultures. Kohlberg stressed that the actual decisions people make are not important, but that the reasoning behind the decisions was important. This reasoning determines which stage of development a child is in.

Unlike the other theories discussed above, Kohlberg's developmental levels and stages are not related to age. Developmental levels are determined by the dilemmas people face and the reasoning they apply in making decisions to resolve these dilemmas. The levels of development range from reasoning based upon self-gratification (preconventional morality), to reasoning based upon conformity (conventional morality) to reasoning based upon individual values that have been internalized (postconventional morality). As each level and its respective stages are discussed below, it is important to remember that adolescents will function at a level or stage more so than others. Determination of the stage at which an adolescent is functioning must be determined by observation and evaluation of the reasoning applied by the child to the dilemmas he/she faces.

#### *Level One: Preconventional Morality*

At this level, the child makes decisions based on cultural roles of what is considered to be right or wrong. The reasoning applied is based upon reward and punishment and the satisfaction of their own needs. This level is divided into two stages.

#### **Stage One Punishment and Obedience Orientation.**

The child acting in this level avoids breaking rules because he/she may be punished. The child demonstrates complete deference to rules. Often the interest of others are not considered.

#### **Stage Two Instrumental Relativist Orientation.**

The reasoning applied during this stage is the one that satisfies the needs of the individual and sometimes the needs of others. However, the only reason that the individual helps another is because a deal has been made where the person the individual helps owes him/her something.

#### *Level Two: Conventional Morality*

Conformity is the most important aspect at this level. The individual conforms to the expectation of others, including the general social order. Kohlberg has identified two stages within this level.

#### **Stage Three Interpersonal concordance or "Good Boy/Nice Girl Orientation."**



Living up to the expectations of others and good behavior are the important considerations for the individual in this stage. There is an emphasis on gaining approval by being nice.

**Stage Four “Law and Order” Orientation.**

The person acting in this stage is oriented towards authority and maintaining the social order. The emphasis is on doing one’s duty and showing respect for authority.

*Level Three: Postconventional Morality*

People who are in this level make decisions on the basis of individual values that have been internalized. These values are not dependent on one’s friends, family, or group, but totally on the individual making the decision. The stages of reasoning also comprise this level.

**Stage Five Social Contract, Legalistic Orientation.**

In this stage, correct behavior is defined in terms of individual rights and the consensus of society. Right is a matter of personal opinion and values, but there is an emphasis on the legal point of view present here.

**Stage Six Universal Ethical Principle Orientation.**

In this highest stage, the correct behavior is defined as a decision of conscience in accordance with self-chosen ethical principles that are logical, universal and consistent. These are very abstract guidelines. (Kohlberg and Kramer, 1969)

## **LESSON PLAN I: THE MALE REPRODUCTIVE SYSTEM**

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**Objectives The student will:**

1. Identify and list the functions of the internal and external organs of male adolescent.
2. Label a diagram of the male reproductive system.

**Procedure**

1. Give each student a copy of the worksheet, Appendix I: the Male Reproductive System.
2. Identify each organ, pronounce each word. Have the student repeat the words.
3. List the function of each of the organs on the bulletin board and have the students copy them as follows;
  - A. Seminal vesicles. Two sac-like structures lying behind the bladder; secrete a thick fluid that forms part of the semen.
  - B. Prostate gland. A gland located in the male pelvis; secretes a thick, milky fluid that forms part of the semen.
  - C. Vas deferens (sperm tube). Passageways for sperm, leading from the testicles and joining with the urethra.

- D. Testicles. Two round glands which descend into the scrotum following birth; produce and store sperm starting at puberty; produce male sex hormone, testosterone.
- E. Scrotum. The pouch located behind the penis which contains the testicles; provides protection to the testicles; controls temperature necessary for sperm production and survival.
- F. Urethra. The tube that runs from the bladder, through the prostate, and finally through the length of the penis. Has two functions: to allow urine to leave the body and to allow semen to be ejaculated; closed to urine during ejaculation.
- G. Penis. The male organ for sexual intercourse and urination.

**Evaluation** Have the students complete Appendix A and list the function of each organ without using their notes.

## LESSON PLAN II: THE FEMALE REPRODUCTION SYSTEM

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### **Objectives** The student will:

1. Identify and list the functions of the female's external reproductive system.
2. Identify and list the functions of the female's internal reproductive system.
3. Label a diagram of the internal organs of the female.
4. Label a diagram of the female's external organs.

### **Procedure**

1. Give the student a copy of the worksheet from Appendix B.
2. Identify each organ and have the students repeat each word.
3. List the functions of each of the external organs as follows on the bulletin board. Have the student copy them in their notebooks.
  - A. Clitoris. A structure located in front of the urethral opening at the point where the inner labia meet; focal point of stimulation for the female. No reproductive function.
  - B. Labia Majora. Two sets of folds on either side of the vagina; provide protection to the clitoris and the urethral and vaginal openings.
  - C. Urethral opening. A small opening in front of the vagina for the passage of urine (not a part of the reproductive system).
  - D. Labia Minora. See (B) above. these are the inner folds of the vagina.
  - E. Vaginal opening. Located between the urethral opening and the anus; may be covered by a thin membrane called the "hymen" prior to first experience of intercourse; outlet for the menstrual flow.
  - F. Anus. the outlet for the expulsion of feces (not part of the reproductive system).
4. List the functions of the following internal organs on the bulletin board.

A. Fallopian tubes. Passageway for the egg from each ovary to the uterus; place where fertilization occurs.

Ovaries. Two oval-shaped structures located in the female pelvic region, under the finger-like

B. endings of the Fallopian tubes; each contains 300,000 to 500,000 egg cells at birth; produce female sex hormones, estrogen and progesterone; begin release of eggs at time of puberty.

Uterus. A pear-shaped muscular organ located in the pelvic region; beginning at puberty, the

C. lining sheds periodically (usually monthly) during menstruation; baby grows and develops within during pregnancy.

Cervix. The mouth or opening into the uterus; protrudes into the uppermost part of the

D. vagina. Protects delicate tissues in the uterus. The opening is only as big around as a piece of spaghetti and is covered by a mucus plug unless the female is menstruating or delivering a baby.

Vagina. Passageway extending from the uterus to the outside of the body; canal through which the baby passes during the delivery; passageway for the menstrual flow to the outside;

E. place where intercourse occurs. Capable of expanding during intercourse and childbirth. Lubricates during sexual arousal; girls often experience vaginal lubrication and possibly orgasm during sleep.

**Evaluation** Have the student complete Appendix B and list the functions of each organ without using their notes.

## LESSON PLAN III: SEXUAL MATURATION OF THE MALE ADOLESCENT

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**Objective** The student will:

1. Discuss the sequential pattern of the male adolescent's sexual maturation.

**Procedure**

1. Using the information from the section titled "Sexual Maturation of the Male Adolescent," discuss and list on board the eleven steps involved in the sexual maturation sequentially.

**Evaluation** Make a worksheet listing each of the step out of sequence. Then have the students number the steps in the correct order.

## LESSON PLAN IV: SEXUAL MATURATION OF THE FEMALE ADOLESCENT

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### **Objective The student will:**

1. Discuss the sequential pattern of the female adolescent. sexual maturation.

### **Procedure**

Using the information from the section titled "Sexual Maturation of the Female Adolescent,"

1. discuss and list on board the steps involved in the sexual maturation of the female adolescent.

**Evaluation Make a worksheet listing each of the steps out of sequence. Then have the students number the steps in the correct order.**

## LESSON PLAN V: PIAGET'S THEORY OF COGNITIVE DEVELOPMENT

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### **Objectives The student will:**

1. Define the words theory, and cognition.
2. Become aware of the fact that they develop intellectually.
3. Perform two versions of Piaget's experiments to see if they are cognitive thinkers, or do they act on the formal operational level.

### **Procedure**

1. Explain to the student what theories are, and how Piaget studied the intellectual development of children.

Explain to the student that children between the ages of seven and eleven operate on the

2. concrete level, and list some of the characteristics of concrete thinkers. (See Piaget's theory within the curriculum)

Explain to the students that as they reach the ages of eleven to fifteen, they should gradually

3. start thinking on the formal operational level. List some of the characteristics of students operating from this level. (see Piaget's theory)

Tell the students that they will perform two of Piaget's exercises that he performed on children during his studies. Let them know that they should try to solve the problem in a systematic manner.

**PROBLEM ONE:** Have students use a combination of colors to make the color green. **PROCEDURE FOR PROBLEM ONE:**

- A. Have the students work in groups of four.
- B. Instruct the students to place 5 ml of water in a container.
- C. Instruct the student to place three drops of different colored food coloring into each container.
- D. Have the student to use an eyedropper to mix different combinations of the colors until they make the color green.
- E. They should place the drops on wax paper.
5. After the student completes the above exercise, ask them the following questions: (1) What combination of colors did they use to make green? (2) List the steps of the experiment.
6. Let the students know that they just used formal operational strategies by experimenting to solve a problem.
7. Give the students the following directions for the next problem.

**PROBLEM TWO :** Number Combination (Procedure as follows)

- A. Give each group consisting of two students, four cards.
- B. Have them write the number one on a card, then the number two on another card, then three on the next card, then the number four on the last card.  
Instruct the student to write as many combinations with the four cards keeping the one in the thousandth place. There are only six different combinations (1234, 1243, 1324, 1342, 1432, and 1423).
- C. Allow the students only three minutes to complete the task.
- D. Ask the students how many combinations did they end up with?
9. If the child came up with the six correct numbers, they have just completed a formal operational task.
10. If the class could not solve the problem, explain how to systematically come up with it.

**Evaluation** Have the student write as many combinations as they can keeping the four in the thousandth place.

## LESSON PLAN VI: KOHLBERG'S THEORY OF MORAL REASONING

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**Objective The student will:**

1. Discuss the three levels at which students and adults reason.
2. Identify the six stages involved in the three levels.

**Procedure**

1. Using the information in the section titled “Kohlberg’s Theory of Moral Development,” explain the three levels at which people reason.
2. Explain the two levels underneath each section.
3. Make up situations for each of the six stages.

**Evaluation Have the student list and explain the six stages of Kohlberg’s Theory of Moral Reasoning.**

## **LESSON PLAN VII: CAREER EXPLORATION**

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**Objective The student will:**

1. Identify a career of their choice and answer pertinent questions about their job.

**Procedure**

1. Tell the students to place the title of their job on the top line of their notebook paper.
2. Write the following questions and instructions on the board:
  - A. List specific activities to be performed on the job.
  - B. What is the job environment? Is the job outdoors or indoors? In a large office? In a noisy factory?
  - C. What rewards does the job provide? High salary? Convenient hours? Emotional satisfaction? Pleasant surroundings? Adventure?
  - D. Why would this job be particularly satisfying to you?
  - E. How much training or education is required? Where could you get it?
  - F. Are there any physical limitations? If so, what are they?
  - G. What is the approximate starting salary for this job? Mid-career salary?
3. Allow the students to go to the library to do some additional research on their career.

**Evaluation Have the student present their findings to the class.**

## **LESSON PLAN VIII: PERSONALITY DEVELOPMENT**

**Objective The student will:**

1. Evaluate their personality via a questionnaire.

## **Procedure**

1. Write the following questions on the board:
  - A. Honestly describe yourself as a worker in school.
  - B. Describe yourself as a worker from your teacher's point of view.
  - C. What is the difference between these two points of view?
  - D. Honestly describe yourself as a friend.
  - E. Describe yourself from your friend's point of view?
  - F. What is the difference between these points of view?
  - G. From your point of view, describe yourself as a family member.
  - H. Describe yourself as a family member from your parents' point of view.
1. What is the difference between these points of view?

- Explain to the students that they are to answer the questions as honestly as possible. When instructed to answer the questions from another person's viewpoint, they are suppose to pretend that they are that person. The student should answer the question the way they feel that the particular person would answer it.
- 2.

**Evaluation** *The questionnaire acts as the evaluation.*

## **LESSON PLAN IX: VALUE EDUCATION**

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**Objective** *The student will be given hypothetical situations where they are to discuss the problem(s) and come up with a just decision.*

### **Procedure**

1. Make up controversial situations and have the students discuss them as a class, or in groups of five.
2. Write the different situations on the board.

Allow the student to openly discuss their problem while you as the instructor act as a
3. facilitator. Never discuss your opinion on the topic because you may sway the class or groups' final decision.

**SAMPLE PROBLEM:** Mary is 14 years old and has recently discovered she is pregnant. She wants to keep the baby. Her boyfriend doesn't want anything to do with the child and tells Mary that he will deny that the child is his. Mary has not told her parents yet. What should Mary do?

**Evaluation** *Have class members make up scenarios like above. Choose at least five to discuss in class. There aren't any right or wrong decisions.*

(figure available in print form)

## Appendix I: The Male Reproductive System

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(Figure available in printed form)

## Appendix B: The Internal and External Female Reproduction System

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(figure available in print form)

## Teacher's Annotated Bibliography

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Caplan, G. and Lebovicci, S. *Adolescence Psychosocial Perspectives* . London: Basic Books, Inc., 1969.

An excellent text which covers the topic of adolescence and explains in detail the psychological and social experiences that is characteristic of adolescents.

Esman, A.H. (editor). *The Psychology of Adolescence* . New York: International University Press, Inc., 1975.

A collection of writing covering all aspects of adolescence from the viewpoint of recent psychologists.

Evernerd, W. and VanderWerfforteten, J. J. *Development in Adolescents* . Heidelberg: Martinus Nijhoff Publishers, 1983.

A collection of papers covering all aspects of adolescent development.

Harris, J. and Liebert, R.M. *The Child: Development From Birth to Adolescence* . New Jersey : Prentice Hall Inc., 1984.

Discusses the developmental stages of adolescences.

Hurlock, E.B. *Adolescent Development* . New York: McGraw Hill Book Company, 1973.

This text focuses on all aspects of adolescent development.

Kaplan, P.S. *A Child's Odyssey* . California: West Publishing Company, 1986.

Covers the entire life of the child from infancy to the end of adolescent. This book is an excellent source of information for teachers in understanding children at any level.

Pulaski, M.A.S. *Understanding Piaget: An Introduction to Childrens' Cognitive Development* . New York: Harper & Row, 1980.

A very informative text on the works of Piaget, emphasizing his findings on cognitive development and its applications to the educational components.



Schowalter, J.E. and Anyan, W.R. *The Family Handbook of Adolescence* . New York: Alfred A. Knopf, 1981.

A comprehensive guide that covers childhood from puberty to adolescence from a medical perspective.

## Student's Annotated Bibliography

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Cole, J. *Asking About Sex and Growing Up* . New York: Morrow Book, 1988.

A simple question and answer book for boys and girls. Best use for 5-6 grades.

Gilbert, S. *Feeling Good* . New York: Far Winds Press, 1978.

Discusses physical, emotional, and mental changes that occur during adolescence and how to care for one's body and cope with problems and conditions that might occur.

Levine, S. and Wilcox K. *Dear Doctor* . New York: Lothrop, Lee & Shepard Book, 1987.

Two doctors offer frank, non-judgmental responses to more than 300 letters from teenagers on intimate subjects.

Madaras, L. *What's Happening To My Body?: Books for Boys* . New York: New Market Press, 1984.

Includes information on: the body's changing size and shape, the growth spurt, reproductive organs, pubic hair, beards, pimples, voice changes, wet dreams, puberty in girls, and much more.

Mahoney, E.V. *Now You've Got Your Period* . New York: The Rosen Publishing Group, Inc., 1988.

Discusses the physical and emotional aspect of getting one's menstrual period. Also explains what happens during a pelvic exam.

McCoy, K. and Wibbelsman, C. *Growing and Changing: A Handbook for Preteens* . New York: The Putnam Publishing Company, 1986.

Addresses questions preteens have about puberty in such areas as body changes, changes in feelings, hygiene, health problems, and talking to doctors and parents.

Nourse, A. *Menstruation* . London: A Grover Company: 1987.

Discusses the menstrual cycle, abnormalities, and their treatment, and the significance of menstruation in one's life.

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