

COURSE: 7065	Parenting and Child Development			UNIT: B	Child Development and Guidance
ESSENTIAL STANDARD:	3.00	B2	20%	Understand prenatal development and the components of a healthy pregnancy and delivery.	
OBJECTIVE:	3.01	B2	7%	Understand environmental and hereditary influences on prenatal development and long-term effects on the health of children.	
ESSENTIAL QUESTIONS:					
<ul style="list-style-type: none"> • How do heredity and environment influence traits of children? • What are some long-term effects of prenatal development? 					
UNPACKED CONTENT					
<p>Prenatal development is influenced by conditions brought on by the environment and hereditary traits. For some of these influences, there are also birth defects and long-term effects that affect the health of the child. A birth defect is an abnormality that is present at birth that affects the structure or functions of the body and may threaten a baby's health and/or welfare.</p> <p>Environmental influences on birth defects</p> <ul style="list-style-type: none"> • Inadequate nutrition of mother <ul style="list-style-type: none"> ▪ Can stunt brain development of baby ▪ Can lead to mental retardation ▪ Increased risk of multiple birth defects and low birth weight • Exposure to diseases or infections during pregnancy <ul style="list-style-type: none"> ▪ Rubella, or German measles, during first trimester of pregnancy can cause severe birth defects, including blindness, deafness, heart disease, and mental retardation ▪ Toxoplasmosis, a parasite that can cause blindness, hearing loss, and learning disabilities, and death; found in cat litter and some raw meats ▪ Varicella, or chicken pox, during first half of pregnancy can cause scarring of the baby's skin, limb defects, eye problems, and miscarriage ▪ Sexually transmitted diseases (STDs) can be passed to unborn child and can lead to serious illnesses, physical disabilities, or death • Harmful substances consumed during pregnancy <ul style="list-style-type: none"> ▪ Nicotine from smoking tobacco or secondhand smoke <ul style="list-style-type: none"> - Smaller than average babies - Miscarriages and premature deliveries - Respiratory infections or allergies 					

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UNPACKED CONTENT				
<ul style="list-style-type: none"> ▪ Alcohol can cause fetal alcohol syndrome (FAS) <ul style="list-style-type: none"> - 20% of infants die - Facial deformities, delayed physical growth, heart defects, and hyperactivity - Mental retardation or disabilities - Poor coordination - Difficulty controlling behavior <p>Environmental influences on birth defects, continued</p> <ul style="list-style-type: none"> • Harmful substances consumed during pregnancy, continued <ul style="list-style-type: none"> ▪ Drugs, over-the-counter and illegal <ul style="list-style-type: none"> - Even over-the-counter drugs can potentially cause serious defects if taken during pregnancy; nothing should be taken during pregnancy without doctor's permission - Pass on drug addiction to the baby; makes it necessary for baby to go through painful withdrawal period after birth - Produces severe, long-term learning and behavioral problems - Large amounts of caffeine increase risk of miscarriage, low birth-weight babies, and infant death - Cocaine increases risk of miscarriage; produces strokes that lead to brain damage, heart attack, birth abnormalities, or death; causes tremors, irritability, sleep problems, and developmental delays - Ecstasy leads to congenital heart problems, physical abnormalities • Exposure to hazards during pregnancy <ul style="list-style-type: none"> ▪ Chemicals--- some types of paint, pesticides, lead-based chemicals, carbon monoxide, mercury, solvents, paint thinners, and formaldehyde---can potentially cause physical and mental abnormalities in unborn baby ▪ X rays can cause childhood cancer, miscarriages, and mental retardation ▪ Toxoplasmosis – extreme high blood pressure • Accidental injuries <ul style="list-style-type: none"> ▪ Cerebral palsy caused by damage to the brain before, during, or shortly after birth ▪ Damage to the developing embryo and fetus from accidental injuries of all types can potentially cause a wide range of birth defects 				

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UNPACKED CONTENT

Hereditary influences on prenatal development and birth defects

- Dominant genes are stronger; recessive are weaker
- Defective recessive genes inherited from both parents
 - Cystic fibrosis---caused by inheritance of recessive genes; more likely to affect Caucasians than African- or Asian-Americans
 - Tay-Sachs disease--- an inherited disease most common among eastern European families of Jewish descent
 - Sickle cell anemia--- Malformed red blood cells that deprive the body of oxygen and prevalent in African-Americans
- Defective dominant gene inherited from one parent
 - Hemophilia---passed on from mothers to sons only; prevents blood from clotting
 - Huntington's disease---manifests in adulthood, leads to dementia
 - Duchenne muscular dystrophy---transmitted by female carriers, usually affects only males
 - Color blindness---usually affects only males
- Errors in chromosomes---problems with the number or structure of chromosomes
 - Down syndrome---associated with mental retardation, increased risk of heart defects, leukemia, poor muscle tone, and distinctive physical characteristics

Combined influence of heredity and environment on prenatal development and birth defects

- Inherited tendency to develop heart defect combined with drug use or virus during pregnancy causes child to have heart defect
- Cleft lip/cleft palate---gap in upper lip or palate; caused by heredity or environment or both
- Spina bifida and hydrocephalus caused by both hereditary and environmental factors; risk can be reduced by taking folic acid during pregnancy
- Multiple births
 - The hyper-ovulation gene may be inherited from the mother; leading to fraternal twins
 - Primarily influenced by environment---Twin-to-twin syndrome (TTTS) is the result of one twin taking nourishment from the other; fertility drugs