

The Basic Buzz - Science Lesson Summary

Introduction:

One of the most extraordinary, objective, empirical scientific facts is that a whole, integrated, individual and living sexually reproduced human being begins to exist as a single-cell human being/human organism, and then continues to grow and develop as the SAME human being/human organism throughout the various stages of human development.

In this science lesson, students will be introduced to this remarkable human development journey, from 1 cell to 100 trillion.

Objectives:

Students will learn the basic, accurate scientific facts about the biological science of human embryology and when a human being/human organism normally begins to exist through sexual reproduction, union of sperm and “egg”.

Grade Levels:

7th - 10th

Length of Time:

50 minutes

Subject:

Science (Biology, Genetics, Human Anatomy, Human Reproduction, Life Science)

Outcomes:

Students will be able to accurately answer the question as to *when* the physical material dimension of a human being (sexually reproduced) begins, and provide the basic associated scientific facts, including that:

- 1 When a human being begins to exist is an objective, empirical scientific fact known and documented internationally for over 100 years.
- 2 The science that specializes in when a human being begins is human embryology and the experts in human anatomy and human embryology are human embryologists with academic degrees in human embryology.
- 3 A new human being/organism begins to exist at the beginning of the process of fertilization, at first contact of the sperm with the oocyte/“egg”, and he or she is a new, whole, individual, living single-cell human being called a human embryo.
- 4 The Carnegie Stages of Human Embryonic Development are the accurate scientific facts about the human embryonic period, and a new human being is represented by Carnegie Stage 1a in the Carnegie Chart.
- 5 The Continuum of Human Life is a biological fact that states a human organism/human being is the same, whole and individual human being throughout the Continuum (from the beginning of fertilization until death).

Procedure:

Lesson Opening

- The teacher will ask students to raise their hands if they are human beings, and then ask students to raise their hands if they are human organisms.
- The teacher will explain to the class the biological fact that a human being is a human organism, and that each of them is a human organism made of many cells, tissues and organs.
- The teacher will provide students with a basic definition of the biological term “organism”, and how an “organism” differs from just a “cell”, “tissue”, “organ”, etc.
- The teacher will present photos of organisms, organs, tissues and cells and ask students to identify. Give them time to discuss.
- The teacher will explain to students that scientists know a new human being normally begins his or her life as a single-cell human organism/being called a human embryo.

Closing

- The teacher will review the key definitions.
- The teacher will provide students with a recap.
- The teacher will ask students if they have any questions or points that they wish to discuss.
- The teacher will show students “The Birds & The Bees | The Basic Buzz” video.

Lesson Body

- The teacher will tell the students that the biological science (a sub-field of human anatomy) that specializes in the early human being and when a human being begins to exist is called human embryology and that the experts to ask about this scientific fact are human embryologists.
- The teacher will explain to students that the Carnegie Stages of Human Embryonic Development are the empirical scientific facts of human embryology.
- The teacher will provide students with the basic facts about the human reproductive processes (i.e., gametogenesis, meiosis, fertilization, regulation).
- The teacher will continue the body of the lesson with a summary of what the scientific experts in human embryology know about when a human organism/ being begins to exist.
- The teacher will tell students about the biological fact that is the continuum of human life.
- The teacher will ask students to share their personal photos to help students understand the continuum of human life.

Assessment & Evaluation

- Students will be asked to complete a human embryology pop quiz. The teacher will determine the best way to conduct the quiz (e.g., class, small groups, individually).

To learn more about this vital lesson, email info@contendprojects.org using the subject line “Basic Buzz”!

*«The best time to start teaching the basics of the biological science of human embryology and when a human being begins to exist was **75 years ago**, in 1942, when the Carnegie Stages of Human Embryonic Development were instituted as SCIENTIFIC FACT. The second-best time is **NOW**.»*

— Contend Projects Proverb