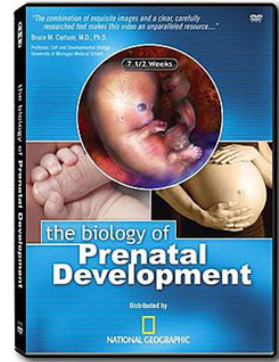


# TWENTY MINUTE LESSON PLAN

## For classroom presentation

The science of human embryology has advanced by leaps and bounds in recent years. In uterine video technology now exists that lets us actually watch developing human life inside the womb. We will watch some of the more spectacular highlights of prenatal development from this National Geographic video.



Clip #	Start	End	Suggested teacher pre-amble before starting the clip
1	1 min 44 sec	2 min 41 sec	In this first clip, we will see video of the embryo at seven weeks. We will see its head, eyes, nose, hands, fingers, its beating heart and the embryo making movements. We will also hear about how important the time spent in the womb is for life immediately after birth and into adulthood.
2	2 min 55 sec	3 min 41 sec	In this next clip, we will see footage of the embryo at eight weeks old and nine weeks old. We will see how active the developing human is moving around in the uterus. We will also hear how most of the major body systems are formed within the first eight weeks after fertilization.
3	12 min 36 sec	13 min 14 sec	In this clip, we are going to see the embryo at a younger stage of development, four weeks and four days. We will see the early images of the embryo's beating heart -- it starts beating at three weeks and one day. We will also see how the full body plan begins to emerge as early as three to four weeks after fertilization.
4	18 min 05 sec	18 min 37 sec	Here we will see an embryo at six weeks and six days old. This is the stage at which the embryo begins making reflexive movements to promote neuro-muscular growth. We will also see the hands and feet of the embryo, which started appearing at five weeks, as well as the external ear.
5	20 min 34 sec	22 min 14 sec	In this clip we will see an embryo at seven weeks old and some of the behaviours & movements. We will also see its heart, which now has four chambers and is developed. The fingers and toes of the embryo are beginning to separate. The embryo at this stage shares some specific similarities to that of adults, such as electrical activity of the heart and the presence of ovaries in female embryos.
6	22 min 43 sec	25 min 31 sec	This next clip will show the embryo at eight weeks. We will see how right or left-handed preferences already develop. We will also see how the embryo rolls over in the uterus, displaying tremendous coordination. Several different types of motion are also going displayed by the embryonic being. We will learn how at this stage of human development, nearly 90% of the structures found in adults are now possessed by the embryonic being.

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7	25 min 58 sec	27 min 25 sec	Now we are going to take a look at the fetus at nine weeks and hear about further development. We will also learn that vocal chords develop at this time. Also, in females the uterus is identifiable.
8	29 sec 58 min	30 min 13 sec	This next clip is at 11 weeks. You will see the nose and lips completely formed at this time.
9	31 min 15 sec	31 min 45 sec	This is a short clip of the fetus at three months old, the end of the first trimester. You will be able to see that its finger nails are present and will observe how rapidly it reacts when it is disturbed.
10	35 min 33 sec	36 min 22 sec	In this final clip, you will see a 4D image of the fetus at five months, with its face more distinct. The skin is completely developed and several more features are now present. Most importantly, five months is considered the present age of viability, where the fetus may survive outside the womb.