FERTILIZATION & EARLY DEVELOPMENT
zygote

**Female Pronucleus moves toward the center**
1. Female pronucleus
2. Sperm nucleus
3. 1st & 2nd polar body

**Nuclear Copulation**
1. Female pronucleus & chromosomes
2. Sperm nucleus and chromosomes
3. Centrosome
4. First polar and second polar body

**Unicellular Stage**
1. First & second polar body
morula

Solid ball of cells 3 days after fertilization
Morula continues cell division and hollows out to form a blastocyst (day 5 – week 2)
trophoblast

The cells that form the wall of the blastocyst
inner cell mass

Eventually becomes the developing offspring
Embryo / gastrula

Embryo is termed a gastrula at the end of the second week.
fetus
placenta
maternal portion

The area of the uterine wall (decidua basalis) where the chorionic villi attach
fetal portion

Includes the chorion and chorionic villi that extends into the uterine wall
Chorion (maroon)
chorionic villi
Amnion (white)
amniotic cavity (space)
yolk sac
Allantois (future umbilical cord)
Fetal circulation
ductus arteriosus

Connects the pulmonary trunk to the descending portion of the aortic arch

Becomes ligamentum arteriosum
ductus venosus

Connects the umbilical vein directly to the inferior vena cava, bypassing the liver

Becomes the ligamentum venosum
foramen ovale

An opening in the atrial septum where blood passes from the right atrium directly to the left atrium and bypassing the lungs

Becomes fossa ovalis
umbilical cord
umbilical arteries (blue)
umbilical vein (red)