

## Launch Lab: Inside Story

### Answer Key

#### Answers to Procedure Questions

1. Table comparing salmon and human reproductive strategies.

| Salmon Reproductive Strategies   | Human Reproductive Strategies  |
|--|--|
| <ul style="list-style-type: none"> <li>▪ reproduce in the fall</li> <li>▪ female lays eggs</li> <li>▪ 500-2500 eggs released at once</li> <li>▪ fertilization outside of the body</li> <li>▪ eggs develop over the winter, in water; gestation period is three months</li> </ul> | <ul style="list-style-type: none"> <li>▪ can reproduce any time of the year</li> <li>▪ female egg remains in the body</li> <li>▪ one egg released at a time</li> <li>▪ fertilization and gestation inside the female reproductive system</li> <li>▪ gestation period is nine months</li> </ul> |

2. Answers can include the following points: both species require organs to produce gametes and hormones to control the release of these gametes. The differences can reflect the fact that salmon do not nurture their young and humans do. Female salmon will not require a uterus because they are simply releasing eggs; human females require a uterus because they are nurturing the egg as well. Human males require a penis to deliver the sperm inside the female reproductive system; male salmon need only to release the sperm close to the eggs. Think about the structure and the function of the organs and their associated systems.

#### Answers to Analysis Questions

1. An advantage of fetal development taking place inside the body is that the fetus is (typically) nourished by the parent; there is less of a risk of being preyed upon than if the embryo is outside the body. Disadvantages of this strategy include: increased stress on the female, risk of injury or death during the birthing process, and a limitation of the number of offspring.
2. It would not be expected for male salmon to have an external penis because the salmon does not deliver its sperm into the female; sperm is simply released, through an opening in front of the anal fin, over hundreds of eggs in the stream bed for external fertilization.
3. A female salmon would not be expected to have a uterus because the fertilized eggs develop and hatch outside of the female's body.
4. Human sperm are not only much smaller than the egg, they have a tail-like structure, so students should be reminded that they move. Based on their familiarity with hen eggs, students might infer that an egg is larger because it might have to store nutrients for the life that develops inside it. Note: The female egg is the largest cell in the human body. One adaptive advantage of motile sperm and immobile eggs is that the sperm are better able to find and penetrate the egg.