

## Warm-up: Cat Chat! (5 minutes)

Let's talk about cats! What do you already know about them? Have you ever heard someone say a cat is 'in heat'? What do you think that means? Let's explore the science behind it!

## Activity 1: Hormone Detectives (15 minutes) - Biology & Language Arts

Introduce the concept of hormones as tiny messengers in the body that tell different parts what to do. Think of them like secret codes sent through the bloodstream!

Key Vocabulary:

- **Hormone:** A special chemical messenger in the body.
- **Estrus:** The scientific name for the time when a female cat is fertile and receptive to mating (often called 'being in heat').
- **Estrogen:** A key hormone that rises during estrus, causing the behavioral changes we see (like being extra affectionate or loud!).
- **Progesterone:** Another important hormone, mainly active if the cat becomes pregnant.

Discuss what these words mean. Have Karina try to use them in a sentence about cats.

## Activity 2: Cycle Timeline Creators (15 minutes) - Math & Biology

Explain that the estrus cycle isn't just one day, but happens in stages over time. For cats, the whole process can repeat many times during the breeding season (usually spring to fall).

Let's map out a \*simplified\* cycle:

1. **Proestrus (1-2 days):** Getting ready! Estrogen starts to rise. Cat might be more affectionate but usually not ready to mate.
2. **Estrus (About 7 days, range 2-19 days):** Peak hormone time! Estrogen is high. This is the 'in heat' stage with characteristic behaviors (calling, restlessness, rubbing).
3. **Interestrus (If not mated, 1-3 weeks):** Resting period before the next cycle starts. Hormones decrease.
4. **Diestrus (If mated/pregnant):** Progesterone takes over to maintain pregnancy. (We can just mention this briefly).
5. **Anestrus (Winter months):** Resting phase during non-breeding season.

Use a piece of paper or whiteboard. Draw a simple timeline or circular chart. Have Karina help mark the different stages and how long they \*roughly\* last. Emphasize the variability.

## Activity 3: Hormone Flow Chart (15 minutes) - Art & Biology

Let's draw! Create a super simple flow chart or diagram showing the main hormones.

- Draw a starting point labeled 'Cycle Begins'.
- Arrow to 'Estrogen Rises' (label this Proestrus/Estrus). Maybe draw a cat showing 'in heat' behaviors.
- If no mating: Arrow to 'Estrogen Falls' leading to 'Interestrus' (resting cat drawing).
- If mating leads to pregnancy: Arrow to 'Progesterone Rises' (label this Diestrus/Pregnancy).

Keep it basic – the goal is to visualize that different hormones are active at different times.

## Wrap-up & Check-in (5 minutes)

Review the drawings and timeline. Ask Karina:

- What is a hormone?
- What does 'estrus' mean?
- Can you name one hormone important in the cat cycle?
- What was the most interesting thing you learned?

Discuss the importance of spaying/neutering pets to prevent unwanted litters and manage hormone-driven behaviors.