



Time Needed

- 24 hours in independent activity;
- 30 minutes in a class activity

Materials

- Graphic organizer
- Writing utensil



As you have learned in this article, humans are endotherms who, like other mammals and birds, must maintain a constant internal temperature in changing air temperatures. In this FACTivity, you will observe and record the ways you maintain a safe internal temperature over a 24-hour period. Humans can vary widely in their TNZ, but most humans will remain comfortable between 64.4 °F and 71.6 °F (18–22 °C). As a class, you will discuss the various ways that humans maintain a safe internal temperature.

Because humans are not covered in feathers or a thick coat of hair, some behaviors are uniquely human, while other behaviors are shared with other mammals and birds.

Methods

Your 24-hour period will begin now. In the graphic organizer that follows this FACTivity, you will first write today's date and the current time. Over the next 24 hours, you will observe and write the behaviors you use to keep your internal temperature relatively constant. For example, if you go outside in the winter, you may put on a hat, coat, and gloves to stay warm. If you go outside in the summer, you may seek shade, you may perspire, and you may drink additional water to keep you cool. At night, you might use an extra blanket if the air temperature is cool. If it is warm, you may use only a sheet to cover yourself. You will need to be observant to note the various behaviors you use to stay comfortable. Also note



This juvenile Mexican spotted owl is practicing gular fluttering. Gular fluttering is when it is hot out and a bird opens its mouth and moves or "flutters" its neck muscles to help with heat loss. Photo by Todd Rawlinson.

The question you will answer in this FACTivity is:

In what ways do humans maintain a safe and healthy internal temperature?

the conditions that prompted your behaviors. For example, were you playing outside in the sun and became so hot that you perspired? Were you in an air-conditioned building and became so cool that you needed a jacket?

Next, imagine yourself either in the middle of summer or the middle of winter. Choose a season that is different from the season you are in now. Using your imagination, identify ways that you would keep your internal temperature at a safe level during the 24 hours of a normal weekend day. Begin at the same time of day that you recorded your previous observations and imagine yourself over a 24-hour period. Record the season and time on the graphic organizer that follows.

Graphic Organizer

| | | | | | |
|---------------------|--|--|--|--|--|
| Today's date | Observation 1: Time of day and what happened | Observation 2: Time of day and what happened | Observation 3: Time of day and what happened | Observation 4: Time of day and what happened | Observation 5: Time of day and what happened |
| | | | | | |
| New date and season | Observation 1: Time of day and what happened | Observation 2: Time of day and what happened | Observation 3: Time of day and what happened | Observation 4: Time of day and what happened | Observation 5: Time of day and what happened |
| | | | | | |

As a class, discuss your behaviors, including what prompted your behavior and what the behavior was. Compare and contrast your human behaviors with that of other mammals and birds.

Discussion questions:

- What are some of the uniquely human behaviors you and others did to maintain a constant and safe temperature?
- What are some of the behaviors you and others did to maintain a constant and safe temperature that you share with other mammals and birds?
- What made you engage in each behavior? For example, did you get chilly, get thirsty, or begin perspiring?
- As the climate changes, how do you think human behaviors will change to maintain a safe internal temperature?
- As the climate changes, how do you think other mammals and birds might behave differently to maintain a safe internal temperature?



Lend a Hand— Care for the Land!

Here are some ideas for how you can lend a hand to help owls. Discuss these ideas with your parents or caregivers. You can tell them about owls and what you learned in this article.

1. If you have a chimney, ask your parents or caregivers to install a chimney cap. A chimney cap will prevent owls, other birds, and other wildlife from getting trapped in your chimney.
2. Take down soccer nets when you are not using them. Owls get caught in nets, and in soccer nets especially. Make sure that soccer nets are not out at night, when owls are most active.
3. Do not use poisons around your home. Owls may eat poisoned animals and get poisoned themselves.
4. Keep your cats indoors. Cats hunt birds and other wildlife, including owls.