

## Under the Ice classroom activities

For use with “Under the Ice,” *Highlights*, September 2012, pages 22-23

### Classroom discussion questions:

- Where do Weddell seals live?
- Where on Earth is Antarctica? (find it on a globe)
- What is it like there?
- Why is it so cold? \*see *activity 1* below\*
- How does the seal pup stay warm in its icy world?
- How tall are you? \*see *activity 2* below\*
- Are you bigger than a newborn Weddell seal pup?
- Are you bigger than a pup that is two months old?
- Why do you think they grow so fast?
- Would you want to be a Weddell seal? Why or why not?

### Activity 1

**Objective:** To demonstrate how sunlight heats different parts of the planet differently.

**Materials:** globe on a stand (must be at 23.4 degree angle), flashlight or desk lamp (ideally **not** LED, as this will not produce heat)

#### Procedure:

1. Ask a student to put his/her hand close to (but not touching) the light. What does s/he feel? (heat)
2. Shine the light on the globe from a 90 degree angle.
3. Locate your city on the globe. Give it a spin. What happens as the planet rotates? Explain how earth’s rotation (spin) is what causes day and night.
4. Ask students if they experience day and night every day of the year.
5. Now ask the students to look at the north and south poles. How much sunlight does the north pole get? What about the south pole?
6. Spin the globe. Does the amount of sun change? Why not?
7. Point out that the middle of the planet—the tropics, which extend 23 degrees north and

south of the equator—get the most heat from the sun.

8. Now walk the globe around the light to mimic the way our planet orbits the sun. At the opposite side, stop. The globe should be oriented the same way, which will put the previously “sunny” pole in the shadows.
9. Ask the students what changed.
10. Animals living in the Arctic (north) or Antarctic (south) have days and nights that last for up to six months. Ask students if they can imagine living in a place that was cold, snowy, and DARK for six months of the year. Now ask why they think Weddell seals pups have to grow up so fast.

## Activity 2

**Objective:** To use math skills to better understand how quickly Weddell seals grow, and how their growth pattern differs from our own.

**Materials:** yard sticks or measuring tapes, masking tape, markers

**Preparation: (optional)** Ask students to find out from their parents how long they were when they were born.

### Procedure:

1. Working in pairs, have students measure each other using the yard sticks or measuring tapes.
2. Students should put a piece of masking tape on the wall (or floor, if lying down) to mark their height, using a marker to write their initials and measured height.
3. If available, have students measure and mark their body length when they were born.
4. Using a new piece of tape, mark the size of a newborn Weddell seal pup (three feet).
5. Now mark a spot six feet up—this is the size of that pup just a few weeks after it is born.
6. Have students examine their growth and that of the Weddell seal. How much have the students grown? How long has it taken them to get that size? Have they doubled in height? How long does it take the Weddell seal pup to double in length? Why do students think the seal pups grow so fast? (because they must become independent before their short summer ends)