Thank you for participating in the Virtual Outreach Program at the Michigan State University (MSU) Museum! Virtual visits are an innovative way to provide a fun and meaningful learning experience without the expense, permission forms and geographic limitations of ordinary field trips. Using videoconferencing technology, you and your students have the opportunity to visit MSU Museum, a Smithsonian Affiliate and Michigan’s science and culture museum. We hope you enjoy Sense of Adaptation! If you have any questions please do not hesitate to contact us at office@virtualoutreach.org or at 517-353-3882.

What you should prepare for the virtual fieldtrip

- Crickets (one for each student, or one for a pair of students)
- Small, clear, zip-lock bag (one for each cricket)
- Pencils/crayons or other coloring utensils for student’s observations
- Paper towels/napkins for each student (demonstrating egg thickness)
- A master observation sheet, please make copies - one for each student
  (This sheet can be found at the student handout link at
  http://museum.msu.edu/ProgramsandPartnerships/Educational/VirtualOutreach/ScienceFieldTrips.html)

**Description of the cricket activity:** The cricket activity integrates all of the lessons learned during the v_trip. Students will be asked to sketch their crickets in the observation # 1 section of the worksheet. They may sketch from as many angles as they wish. Observations are based on the five senses. For example, a student may ask, “What do I see?” (large hind legs, wings, antennae, etc.). Once the drawings are completed, we will discuss the students’ observations.

Next, students will be asked to imagine an environment that is cold, has no vegetation, many predators, a mountainous terrain, etc. Students will use their knowledge of adaptations to sketch a new “imaginary” cricket in observation # 2 on the worksheet. They will be asked to think about what they know about the new environment to create unique adaptations for their cricket. In the past, we have had students come up with brightly colored crickets to indicate that they are poisonous, crickets with large, sharp teeth to eat meat, or even crickets that don’t need oxygen in order to survive in space. This is an excellent opportunity for students to be creative and reflect on what we have discussed and what they have learned throughout the v_trip.

**Where to get crickets:** Your local pet store or other large pet supply stores like Petco usually sell crickets. Stores typically sell crickets in 10s or 12s, usually costing no more than $1.00/dozen. If the store has crickets of
different sizes, ask for the largest ones. These will be the easiest to observe. The pet store usually hands over the crickets in a plastic bag. In order to avoid a mass of crickets jumping around your classroom during the activity, we recommend putting the crickets in a bag and placing in a freezer overnight. Before the activity, you will also want to separate the crickets into individual bags for students to observe. If you are not comfortable using dead crickets, you can put them in the refrigerator an hour or so immediately before the v-trip. Doing so will slow them down considerably and make them easy to handle (but be advised they will become quite active after 20-25 minutes of being removed from the refrigerator). We discourage releasing any live pet store insects into the environment; rather we advocate disposing the dead crickets into any waste receptacle.

If you are not able to buy crickets, the students will also be able to see a cricket on the screen. In our experience, however, the students really enjoy the tangible experience of observing their own cricket.

Please dial in on the time and date of your scheduled field trip. Our IP address is 35.8.122.60.

Once again thank you for requesting your virtual fieldtrip from the MSU Museum’s Virtual Outreach Program. We look forward to meeting you and your young scientists!