

This game works well with Middle School aged kids.

It is important that they understand these concepts before discussing invasives. They have probably already learned these things, so this may be a review, or you may have to teach them a few things. Make it a fun discussion, draw them out.

Web of Life – how all living things are connected and a constantly shifting balance is maintained

Trees – benefits and problems (sometimes helps to talk about what a pain it is to have trees – block the sun, have to rake the leaves, etc. This will get kids defending trees and then you can talk about benefits – shade, oxygen, home for wildlife, food for wildlife, etc.)

Predators and prey

Insects – benefits and problems

Invasives – use examples they may be familiar with – milfoil, purple loosestrife, Japanese beetle

Game – When Invasives Invade

Discussion – What does an animal or a human or an insect need to survive? They should throw out ideas here like food, water etc. (If the group seems pretty knowledgeable you can also talk about defense mechanisms as necessary for survival) Ask them what would happen if they didn't have enough water. Or if they did not have enough space to live. Would these factors make life easy or hard? What would you have to do to survive in these conditions?

Invite the students to partake in a habitat game in which they are to imagine themselves as insects.

In order to survive the insect must collect food, find water, find a place to stay for shelter and find a place to live where there is space (or develop a defense mechanism such as camouflage)

Option 1 – In a Field or Gym

Materials: four different colored balls, enough for each student to have 1 red, 3 green, 2 blue and 1 brown plus a few extra of each (Can also use large cardboard circles or paper plates or plastic cups).

1 hula hoop per student, or enough string or yarn to make a hula hoop sized circle

Bean Bags – about 1/2 as many as there are students

Define a large area such as the basketball court in the gym or the baseball diamond outside or a circle in the grass using rope or ??.

Place the balls randomly within the area. Have the students place their hula hoop just outside this area (have them spread out)

Explain to the students that the balls represent the things the “insects” need to survive – red=shelter, green=food, blue=water and brown=space

Each round lasts one minute. You should yell GO and STOP loudly.

For all rounds: “Insects” can only carry one ball at a time and they need to place the ball in their hula hoop before collecting the next ball. They should not collect more balls than they need. These rules do not apply to Invasives. In order to survive each “insect” must collect 1 red ball, 3 green balls, 2 blue balls, and 1 brown ball.

Round One – Use all the balls. In this round most “insects” will survive as there are plenty of resources for everyone. Have the students gather round and discuss that.

Round Two – Add a predator. Place the balls again. Play the game the same way except the “predator” stands outside the area and throws bean bags at the “insects.” If he hits one then that insect is “eaten” and must come sit outside the area. These insects have not survived. Discuss that.

Round Three – Include the predator in this round. Remove 1/3 of the green balls and explain that there is a food shortage due to tough winter conditions. Or remove 1/4 of the blue balls and talk about a drought. Place the balls randomly and play the game again. Since there will not be enough resources to go around, some “insects” will not get everything they need to survive. Discuss that. Talk about how competition increases as resources decrease. (Be careful here that as they “fight” for resources they don’t actually become physically violent. Make sure the “predator” doesn’t hurt anyone with the beanbags)

Round Four – Add an invasive. This “insect” loves the food in this area and has no predators in this area. Because of that, it can carry as many balls at a time as it wants, it can collect as many of each color as it wants (as long as it gets the minimum of each color) and the predator cannot kill it. Because of these advantages it will collect a large number of balls. Many of the other “insects” will not get the balls they need and will not survive. Discuss that.

Option 2 – In a fairly open area, with some room to move around.

Materials - four different colored beads (red, green, blue and brown) – about ?? of each.

1 large bowl for each set of 6-8 students

1 small bowl per student

1 small spoon per student

1 large spoon for each group

1 ruler

For each group of 6-12 students place one large bowl with beads on a table or desk in the middle of the room. Give each student a small spoon and a small bowl and have them place them around the edges of the room (have them spread apart).

Explain to the students that the beads represent the things the “insects” need to survive – red=shelter, green=food, blue=water and brown=space

Each round lasts one minute. You should yell GO and STOP loudly.

For all rounds: In order to survive each student must collect 1 red bead, 3 green beads, 2 blue beads, and 1 brown bead. They must use the spoon to pick up the beads (no touching the beads with their hands), they can only carry one bead at a time, and they need to place the bead in their bowl before collecting the next bead. (If they drop a bead they must go back and get a new one) They should not collect more beads than they need. They should not try to knock beads out of each others spoons.

Round One – Use all the beads. In this round most “insects” will survive as there are plenty of resources for everyone. Have the students gather round and discuss that.

Round Two – Add a predator. Place the beads in the bowls again. Play the game the same way except the “predator” attacks the “insects.” Give the “predator” a ruler. The predator uses the ruler to knock the “insects” spoons, causing them to drop their beads. The predator must attack one “insect” from each group in order. (Make sure the predator is gentle, and only knocks the spoons, not the students). Some insects will not be able to get all the resources they need this time. Discuss that.

Round Three – Include the predator in this round. Remove 1/3 of the green beads and explain that there is a food shortage due to tough winter conditions. Or remove 1/4 of the blue beads and talk about a drought. Place the

beads in the bowls and play the game again. Since there will be fewer resources to go around, some “insects” will not get everything they need to survive. Discuss that. Talk about how competition increases as resources decrease. (Be careful here that as they “fight” for resources they don’t actually become physically violent.)

Round Four – Add an invasive. This “insect” loves the food in this area and has no predators in this area. Give one student from each group a large spoon. Explain that this is the invasive and there are special rules for the invasives. It can carry as many beads at a time as it wants, it can collect as many of each color as it wants (as long as it gets the minimum of each color) and the predator cannot kill it. Because of these advantages it will collect a large number of beads. (Make sure the predator does not attack the invasive) Many of the other “insects” will not get the beads they need and will not survive. Discuss that.

After the games have the students sit down or return to the classroom. Review what you learned in the game. What were some of the reasons for an insect not surviving? If they were real insects and they did not meet their needs, what would happen? What happens when an invasive invades? Why does the invasive insect have such an advantage over the native insects?

Talk about Asian Longhorned Beetle. Explain how the game they just played is actually happening in Worcester, Massachusetts (ask them if they know where that is, show on a map if possible). Explain why we want everyone (especially middle-schoolers, who are very observant) to be on the lookout for the ALB.

Firewood

What to look for

How to report