

• ● Invading Characters ● •

PURPOSE: *Students are challenged to read a paragraph about biodiversity with progressively more letters replaced with typographical characters in each version. The activity illustrates how an ecosystem (represented by the paragraph) can be disturbed by invaders (represented by characters), and introduces concepts of native species and biodiversity. Use this activity as a warm up for Lesson 1: Graffiti Gallery.*

TIME:

20 minutes

MATERIALS:

Flipchart/pen, Overhead projector, **BLM 1, 2 & 3:** Invading Characters #1, #2, #3 (copied on to overhead slides)

PROCEDURE:

1. Make a Biodiversity KWL chart. As a class fill in the K (prior knowledge) and W (want to know) columns. Post the chart for students to see as they complete the “Invading Characters” activity.
2. Ask for three volunteers who are comfortable reading aloud and ready for a challenge.
3. Put the first overhead slide up and explain that each letter in the paragraph represents a species in an ecosystem. Biodiversity is the variety of life on Earth; invading species threaten biodiversity by out-competing native species. Ask volunteer #1 to read the paragraph aloud, then have the whole class read it aloud.
4. With their elbow partner, have students use Think-Pair-Share to talk about what the paragraph means to them.
 - What do we mean by “natural controls”? (e.g., climate)
 - What could some of the devastating effects be?
5. Put up slide #2 and ask volunteer #2 to read it aloud, followed by the whole class reading aloud. Ask students:
 - What is different about this slide?
 - Who are the invaders?
(It is the same paragraph with # added after every “a” and * added before every “d” throughout).

- How did the invaders affect your ability to read the paragraph?
(Adding just two symbols (# and *) really changes the paragraph. Unfortunately, invading species don't just confuse an ecosystem by adding to it. They compete with other species for limited resources such as nutrients, space, sunlight, and clean water. Invading species often have no natural predators or controls so they are able to consume more resources and produce more offspring than native species. Before long, the native species disappear from the ecosystem.)
6. Put up slide #3 and ask volunteer #3 to read it aloud, followed by the whole class.
 - Using Think-Pair-Share, ask students what is different about this slide? Try to find the pattern. What might be going on to allow this to happen?
(The invading characters are doubled because the conditions are just right for them; the letters "c" and "e" are deleted throughout because the invaders have the same needs and have displaced them.)
 - How do the changes represent what happens in nature?
(Invaders can take over and push out native species. The paragraph illustrates how loss of diversity creates change (ie. the look of the paragraph is changed which makes it difficult to read).
 7. Return to the KWL chart from step 1. As a class complete the "L" (learned) column and note any subsequent questions to be explored throughout the unit.

TRY THIS IDEA ...

Instead of using the overhead projector, print the paragraphs on large posters to use in a gallery walk around the classroom or use a smart board.

EXTENSION

Have students use the information they have on biodiversity up to this point to create their own paragraph; share student-written paragraphs in small groups or with the whole class.

Provide new text in an already invaded format, showing how difficult it is to put things right when the reader is unsure of the original text.

Adapted with permission from Hilltop Garden & Nature Centre:

http://www.indiana.edu/~tandlpub/story.php?story_id=39

Invading Characters Overhead #1

Biodiversity is the variety of life on earth, from microbes to plants and animals. Invading species are one of the greatest threats to the biodiversity of Ontario's waters, wetlands, and woodlands. Coming from other regions of the world, and without their natural predators and controls, invading species affect biodiversity by taking over habitats and ecosystems, and reducing the numbers of native species.

Invading Characters

Overhead #2

Bio*diversity is the va#riety of life on ea#rth, from microbes to pla#nts an*d a#nima#ls. Inva#*ding species a#re one of the grea#test thre#ats to the bio*diversity of Onta#rio's wa#ters, wetla#n*ds, a#n*d woo*dla#n*ds. Coming from other regions of the worl*d, a#n*d without their na#tura#l pre*da#tors a#n*d controls, inva#*ding species a#ffect bio*diversity by ta#king over ha#bita#ts a#n*d ecosystems, a#n*d re*ducing the numbers of na#tive species.

Invading Characters

Overhead #3

Bio**divrsity is th va##rity of lif on a##rth, from mirobs to pla##nts an*d a##nima##ls.

Inva##**ding spis a##r on of th gra##tst thr##ats to th bio**divrsity of Onta##rio's wa##trs, wtl a##n**ds, a##n**d

woo**dla##n**ds. Oming from othr rgions of th worl**d, a##n**d without thir na##tura##l pr**da##tors a##n**d ontrols, inva##**ding spis a##fft bio**divrsity by ta##king ovr ha##bita##ts a##n**d osystms, a##n**d r**duing th numbrs of na##tiv spis.