Bears, Backyards, and Beyond: Understanding Habitat and Coexisting with Wildlife

Founded in 1985 by teachers for teachers. Inside Education is Alberta's largest environmental and natural resource education charity. Our mandate is to support K-12 school teachers across Alberta and inspire their students when it comes to working towards a balanced, sustainable future for our environment, economy, and society.

Included in this Teacher's Guide:

1. Background on the Bear in the Boreal game
2. Instructions for accessing the video game
3. Reflection and Extension Questions
4. How to submit feedback on the game/bug report

BACKGROUND

The Bear in the Boreal video game was developed in collaboration between the University of Lethbridge, Inside Education and FluidPlanet, with funding from the Alberta Conservation Association, to help teachers support and enrich lessons on human-wildlife interactions, and the ways in which natural resource development can have unintended consequences on ecosystems and the resident species. It is still in its Beta version, and we'd love for you and your students to explore and test it! *Multiple students can log in at the same time,* but they will not be able to see each other, so the game is individualized and unique to each player.

This game was developed using LIDAR (Light Detection and Ranging) technology collected by the University of Lethbridge, creating virtual versions of Alberta landscapes! As you explore the world within the video game, you will be walking through a simulation of an area north of Utikuma Lake, in Alberta.. Many of the human-built features have been removed in order to make the game more playable, but the map in the lower left hand corner allows you to view the region on Google Maps and understand the context of the play area.

GAME STORY AND HOW TO PLAY

Explore Alberta's boreal forest, search for food, and avoid interacting with human development in this interactive Bear in the Boreal game!

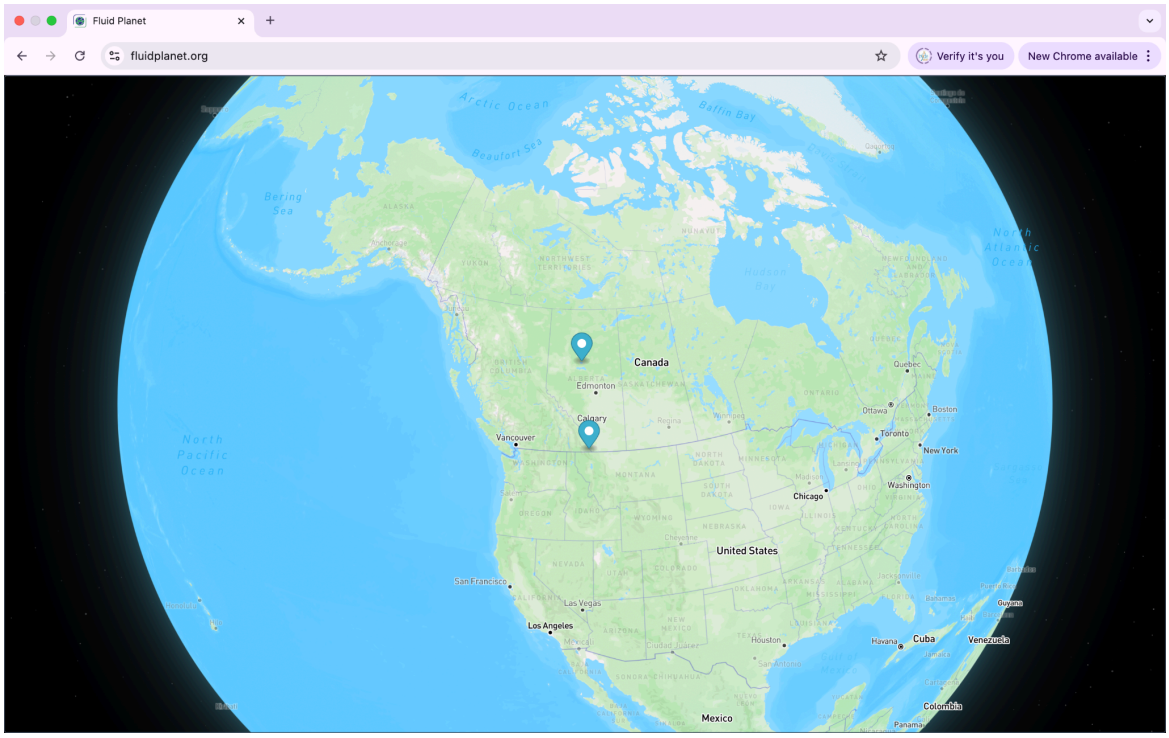
You spawn as an adult black bear, approximately 54 kg (120 lbs), which is the average weight of a bear in spring. Use the arrow controls to explore the forest and look for food to eat - watch the compass at the top of the screen for clues on where to find Canada buffaloberry (Shepherdia canadensis), a major food source for bears in Alberta. A berry symbol will appear when you are within 100 m of a buffaloberry bush. When your bear encounters one of these red shrubs, they will automatically eat the berries and gain weight!

Watch out for evidence of humans as you explore the forest - different human impacts will affect the forest in different ways, affecting the availability of food and your bear's safety!

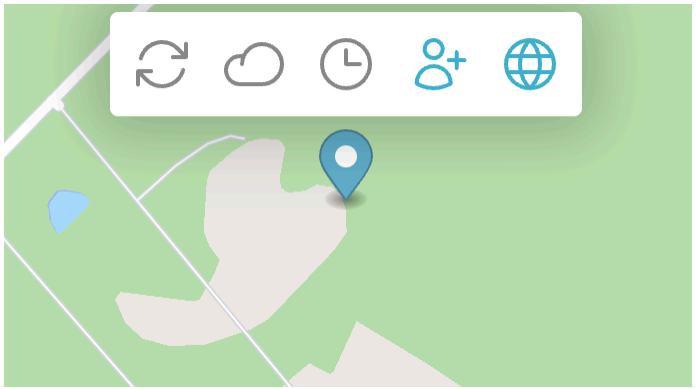
THE GOAL OF THE GAME: is to get the **fattest bear** after a certain set amount of time - we recommend having students each play for 10-15 minutes, and then comparing their bear's weight! Each buffaloberry shrub = 0.5 lbs of weight gain. This is not true to reality, but an easy metric for game play.

TO ACCESS THE GAME:
Go to fluidplanet.org
Log in password: insideeducation

When you log in, there are 2 location icons. Click on the most northern one to play the Bear in the Boreal game. The south icon is for our West Castle Fox game, which is still in major development.



Controls
MOVE: ⬆⬇⬅➡ Use directional arrow keys or WASD
RUN: ⬆⬇⬅➡ + Shift
JUMP: ⬆⬇⬅➡ + Spacebar
STAND Spacebar
CHANGE CAMERA ANGLE: Mouse click & drag



The Map
In the bottom left corner of the screen is the map. This is not a navigational map - it simply shows the pinpoint location of the video game simulation on Google Maps. You can click on the map and scroll out to see the context of the video game location. To exit the map, double click on the Location icon.

Clickable Google Map Link to Utikuma Lake point:
https://maps.app.goo.gl/hSSfsRe9wxqW5p4UA

The Icons

 Return to original settings

 Set weather to Snow, Rain, or Sun to adjust difficulty

 Reflects the current time of day - adjust the toggle to change time of day for game play

 A QR code to access fluidpanet.org

 Links to the University of Lethbridge's Weather Stations, installed at the West Castle Field Station and the Ridge above the field station. The weather station and website is maintained by the ARTeMIS Laboratory. The site contains 4 live feeds from cameras, temperature, relative humidity, and sea-level pressure in real time, and shows comparison charts for the last 3 days between the Field Station sensors and the Ridge sensors. .

Suggested Game Play Flow

Step 1: Provide each student with their own computer or mobile device to log in.
Step 2: Provide each student with a pencil and a post it note to record their weight at the end of game play. Have them write their names on the post it note before starting
Step 3: Have your students log in, but wait to begin playing until everyone has made it past the load screen: we usually have students raise their hands once their screen has finished loading.
Step 4: Set a timer for 10 minutes - ready, set, go! When the timer goes off, all students must raise their hands off the keyboard to signal they heard the timer.
Step 5: Students record their bear weight on their post it note. They can either hand it in to be reviewed, or students can share, popcorn-style.

Multiples Rounds Suggested:

Round 1: Play for 10 minutes and record weight results. Note the Fattest Bear.

Round 2: Students adjust their Weather Toggle to Rain. Play for another 10 minutes and record weight results. Note the Fattest Bear.

Round 3: Students adjust their Weather toggle back to Sun, but use the Clock icon to set the time for 8 pm. Play for another 10 minutes and record weight results. Note the Fattest Bear.

Recognition can be given to students as winners of each round OR results can be tallied and recognition goes to Fattest Bear Overall.

REFLECTION QUESTIONS ON THE VIDEO GAME:

1. If you found buffalo berries, describe the landscape features where the berries were (was it heavily treed, or open meadow? etc.).
2. If you did not find buffalo berries, what landscape features did you see?
3. What evidence of humans did you encounter?
4. There was both an old wildlife burn, and a cutblock. Were berries found in both locations?
5. Compare the video game landscape to the Google satellite view of the area. How would your bear's success have changed if all the human-built features (pipelines, roads, etc.) were included in the video game?
6. Was it easier or harder to find berries once the Weather or Clock was adjusted?
    a. Consider: What time of day do bears normally forage for food?
        Answer: dawn and dusk
    b. Consider: How would bears be impacted by varying weather conditions?
7. Click on the map in the lower left corner or, using Google Maps, click https://maps.app.goo.gl/hSSfsRe9wxqW5p4UA. Switch to Satellite view to see the real context of the video game, and scroll out. What features, both human built and natural, exist in real life that are not reflected in the game? How would they change the game play?

EXTENSION QUESTIONS:

1. *Individual research:*
    a. What time of day does a bear normally forage?
    b. From the bear backgrounder provided at Mayor's Environmental Expo, what month (or range of months) would this game take place?

2. *Group Research Project:* Have students pick an industry (oil sands mining, natural gas extraction, coal mining, forestry, agriculture, recreational, provincial or federal parks) and explore how those industries manage bear-human conflicts. Have students present to each other to discover if there is overlap in issues or management techniques.

DISCUSSION QUESTIONS

- Are there different techniques being used by industries that operate in grizzly bear territory, black bear territory, or areas with both types of bears?
- What techniques are normal, and what techniques are novel?
- Are there methods to manage bear-human conflicts not currently done by industry, or not done in Alberta?
- Do students have ideas on new ways to manage bear-human conflict?

HOW TO SUBMIT FEEDBACK ON THE GAME OR FILE A BUG REPORT

Since this video game is still in beta testing, there are some obvious flaws and bugs within the system. If you would like to participate in our Bug Collection,or have suggestions to make the game more enjoyable or educational, please click https://forms.gle/QPEN6Z2f5DiY6BXx9 or scan this QR Code to go to our form.