# Imaginality Create Activity:
Earth Builder

Aim

Create your own interactive module where you can build the Earth up from its inner core, all the way out to the surface. You are provided with the five layers of the Earth – one on each of the ⬚Paddles 1-5⬚. Then, when any of the ⬚Paddles 2-4⬚ get close to ⬚Paddle 1⬚, their Earth layer moves over to ⬚Paddle 1⬚ and locks into place.

Loading the Models

1. Download **'Earth Builder.module'** from here and save it to **'My Documents/Imaginality/_Activities/Earth Builder'.**

2. Double Click on the module file. This will open Imaginality Create and load the module.

3. Click **Run in Webcam Mode** and explore ⬚Paddles 1-5⬚. *See* ③
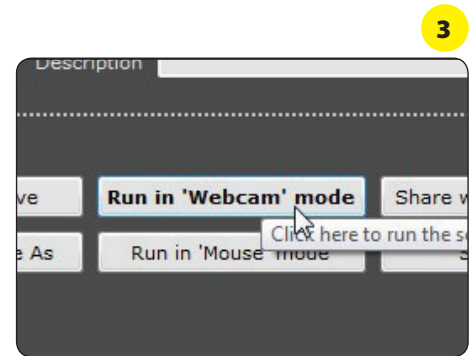
Setting the Interactions

This will make interactions so that when any of the ⬚Paddles 2-4⬚ get close to ⬚Paddle 1⬚, their Earth layer moves over to ⬚Paddle 1⬚ and locks into place.

4. Click on **'EarthCut02OuterCore.mesh'** *See* ④

5. Under **Interactions,** click on the **+** button to add a rule. This will bring up the **Interaction Trigger** box, where you will select which action will cause which result.

6. Under **Interaction Trigger**, select **Distance Closer Than.** Under **Trigger Settings,** select **EarthCut01InnerCore.mesh**, and under **Trigger when closer than,** it should say **200.** This means, that the result will be activated when the **EarthCut01InnerCore. mesh** is closer than 200mm to the **EarthCut02OuterCore. mesh** model.

7. Under **Interaction Result**, select **Match Position & Rotation To.** Under **Result Settings** set the **Model** to **EarthCut01InnerCore. mesh.**

8. Do steps 4-7 for meshes **'EarthCut03Mantle.mesh', 'EarthCut04Lithosphere.mesh'** and **'EarthCut05Surface. mesh'.** For each of these, keep the **Close To Model** under **Trigger Settings** set to **EarthCut01InnerCore.mesh** and **Model** under **Result Settings** set to **EarthCut01InnerCore. mesh.** *See* ⑥–⑧

③

④

⑥ - ⑧
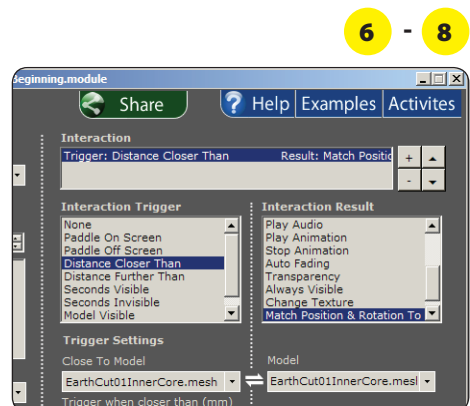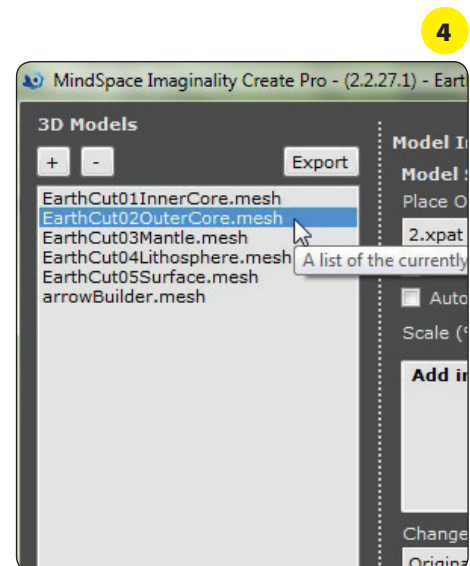
Test it out!

9. You can test this module out by pressing the **Run in Webcam Mode** button near the bottom of the screen.

10. If you are happy with the result, you can arrange Paddles 1-5 on your desk as a scene and **take a screenshot** by clicking the little **camera icon** in the top right corner. This will ask you to save your photo which, you can save to the same place as the module file. *See* **10**

11. If you are happy with the result, you can **Share with internet** so that anyone you choose can view it for free. You will need to create a free author account and provide a short description of the module. You will then be able to either share it publically, or share it privately via email, twitter, Facebook, or other social networks.

12. If you want to save your module, click on **Save As,** and then type the name you want to give the module and where you want to save it. Then press **Save.** Later, you can **Load** the module again.

Other things to try

13. Do some research on: the Inner Core, Outer Core, Mantle, Lithosphere and Surface. Summarise your findings in a few sentences and enter them into Create so that they will appear on the info paddle. Select the appropriate mesh, and replace **Add info text here** with your text. Now, when the info paddle comes close to the relevant paddle, the info paddle will contain your text – you can enlarge it by pressing spacebar. Or, simply show the relevant paddle and press spacebar to reveal your text.

14. Add a magnifying glass to Paddle 6 and add the appropriate Interactions **(Distance Closer Than, Resize Once)** to magnify each of the layers of the Earth.

15. Add a **Play Audio** interaction to add a sound effect every time an Earth layer moves across or back **(Distance Closer Than or Distance Further Than).**
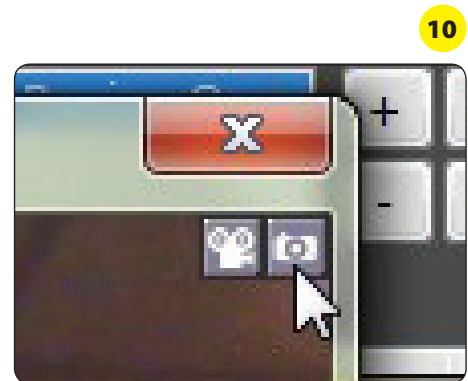
16. Make semi-transparent versions of the layers that fill in the empty spaces when the main ones have moved away.

   a.   **Export** all 5 layer meshes. Add **'Transparent'** to the start of the name. Add them all back into Create on the same paddles as their solid versions. Give them each an interaction of **Paddle on Screen** with **Transparency** of 80%. *See* 16a

16a
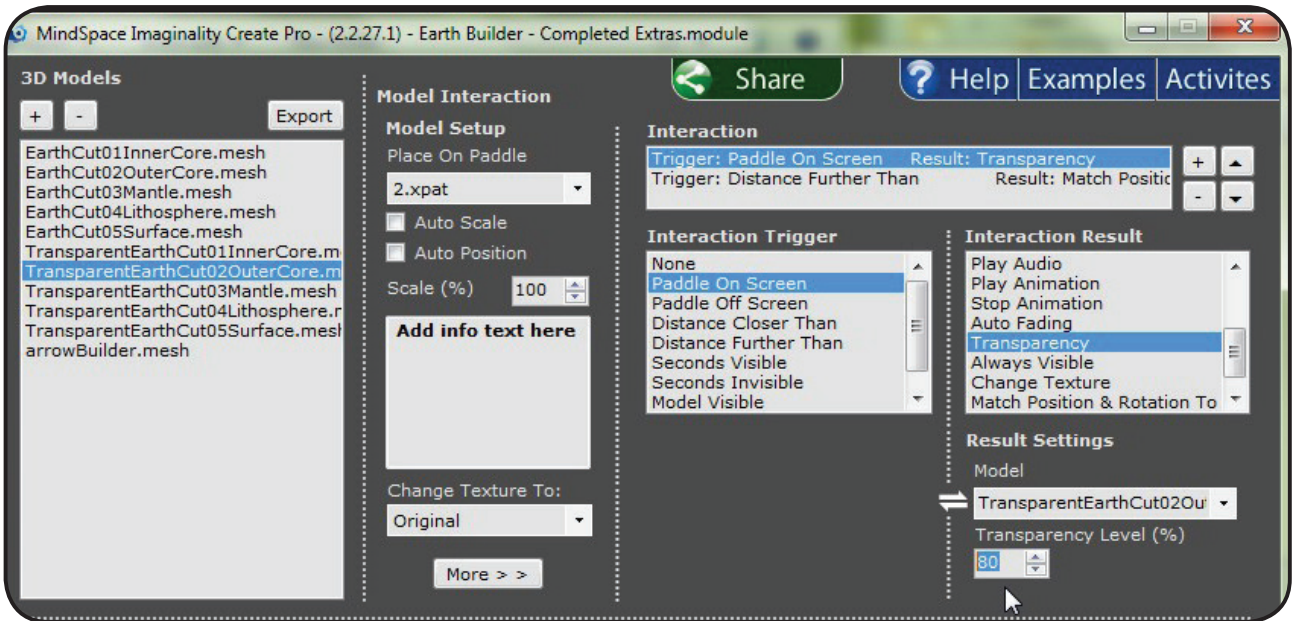
   b.   Add interactions for them that are same as steps 5-7, except instead of **Distance Closer Than,** use **Distance Further Than**. eg. TransparentEarthCut02OuterCore. mesh is placed on Paddle 2, and when **Distance Further Than** 200 to EarthCut01InnerCore.mesh, **Match Position & Rotation To** EarthCut01InnerCore.mesh. *See* 16b

16b

17. For each of the 5 layers, write down what it would be like to visit there. Explain why you think that. Discuss your list in a group: present your ideas; listen to comments from other students; respond to these comments; listen to other people's ideas and comment on them. As a group, can you agree? Apply the same process to the following lists:

   a.   For each of the 5 layers, write down what you would need to survive a visit there.

   b.   For each of the 5 layers, write down how that layer affects or helps support life on Earth.