

Use your reading from last week to answer these questions.

Quiz – circle or highlight the best answer

---

1) What can electromagnetic waves travel through that mechanical waves cannot travel through?

- Air
- Wood
- Water
- Vacuum
- All of the above

---

2) Electromagnetic waves are classified using what measurement?

- Amplitude
- Frequency
- Power
- Energy
- Type of photons

---

3) What type of electromagnetic waves cause sunburns?

- Radio waves
- Microwaves
- Infrared rays
- Visible light
- Ultraviolet

---

4) What type of electromagnetic waves are used to cook food, predict the weather, and for communications?

- Radio waves
- Microwaves
- Infrared rays
- Visible light
- Ultraviolet

---

5) What type of waves are used on a TV remote control?

- Radio waves
- Microwaves
- Infrared rays
- Visible light
- Ultraviolet

---

6) Which electromagnetic waves have the longest wavelengths?

- Radio waves
- Microwaves
- Infrared rays
- Visible light
- Ultraviolet

---

7) Which electromagnetic waves enable humans to see?

- Radio waves
- Microwaves
- Infrared rays
- Visible light
- Ultraviolet

---

8) What type of electromagnetic waves have the shortest wavelengths?

- Radio waves
- X-Rays
- Infrared rays
- Gamma rays
- Ultraviolet

---

9) What type of electromagnetic waves are used to take pictures of bones in medicine?

- Radio waves
- X-Rays
- Infrared rays
- Gamma rays
- Ultraviolet

---

10) What type of electromagnetic waves have the most energy?

- Radio waves
- X-Rays
- Infrared rays
- Gamma rays
- Ultraviolet

**\*\*Options – Learn something about motors – Choose one of the following options.**

Option A – Attend Zoom Class on motors. Participate in the discussion, take notes, and show me your notes at the end of the meeting.

Or

Option B – If you have at home some wire, a AA battery and a small disc magnet and/or some paperclips you can try to make your own motor. Film yourself and give a mini-presentation on what you did and how it works. There are many online videos to give you a tutorial on how to make one. Send me the video of your mini-presentation.

Or

Option C – Watch this video and sketch/draw some notes as he explains how an electric motor works.

[https://www.youtube.com/watch?v=onjFFoOC\\_yk](https://www.youtube.com/watch?v=onjFFoOC_yk) Send me picture of your sketch notes.

Or

Option D – Ask your parents (relative or neighbor, anyone who has a car to show you the engine of their car. Draw and label what you see under the hood. Label as many parts as the adult in charge can tell you about what you see. Ask them how they think the motor part actually works and write down what they know....if they have no idea then write down your own ideas under the picture. Hint....it has something to do with electricity and magnetism. Label where you think this actually is under the hood.

# Magnetism and Electricity

Given the clues below, construct the crossword puzzle below that would fit the clues.

## ACROSS

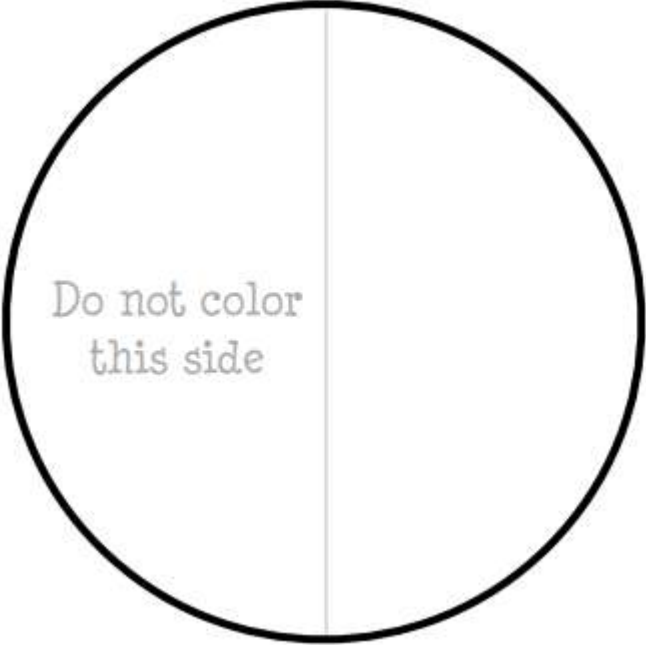
- 3 type of electromagnetic wave that has the highest energy
- 5 type of magnet made with electricity
- 7 type of electromagnetic wave that is often used to transmit data
- 9 atomic particle responsible for magnetism and electricity
- 10 the ends of a magnet
- 11 how a north and a south pole interact
- 12 type of electricity that doesn't move

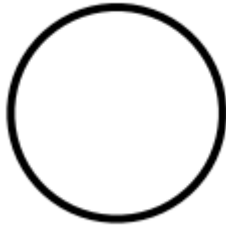
## DOWN

- 1 the area around a magnet
- 2 opposite pole of south
- 4 device that converts electricity into motion
- 6 magnetism is this type of force
- 8 a device that interacts with magnetic fields
- 13 wire wrapped into a loop

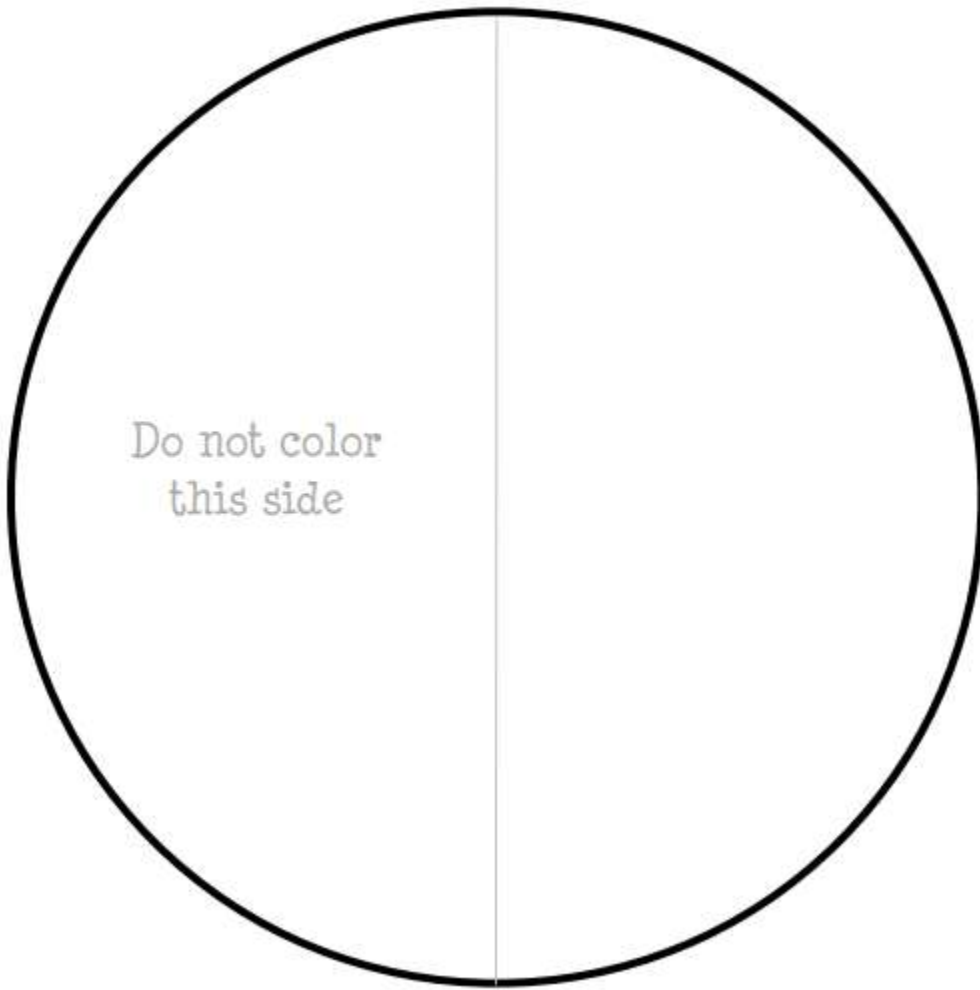
Layers of the Earth Art Activity

1. Color half of each of the interior layers of the Earth and the exterior of the Earth. For the inside layers just color the right half so that the glue will stick better. If you don't have glue, then tape will also work.. If you don't have glue or tape you can make your own glue using flour and water.
2. Cut the exterior of the Earth, interior layers of the Earth and labels.
3. Glue the inner core layer in the center of a piece of paper. In your notebook if you have it.
4. Fold the mantle, crust and outer core layers on the light grey line.
5. Glue (or tape) the uncolored (left) half of the outer core so that it is centered over the inner core.
6. Glue (or tape) the uncolored (left) half of the mantle so that it is centered over the outer core.
7. Glue (or tape) the uncolored (left) half of the crust so that it is centered over the mantle.
8. Glue the left half of the Earth of that it is centered over the crust.
9. Glue labels on to the correct layers and title the page at the top.
10. Do some research on the layers and add some details to each layer. Some examples could include temperatures, movement and composition, what is each layer made of?

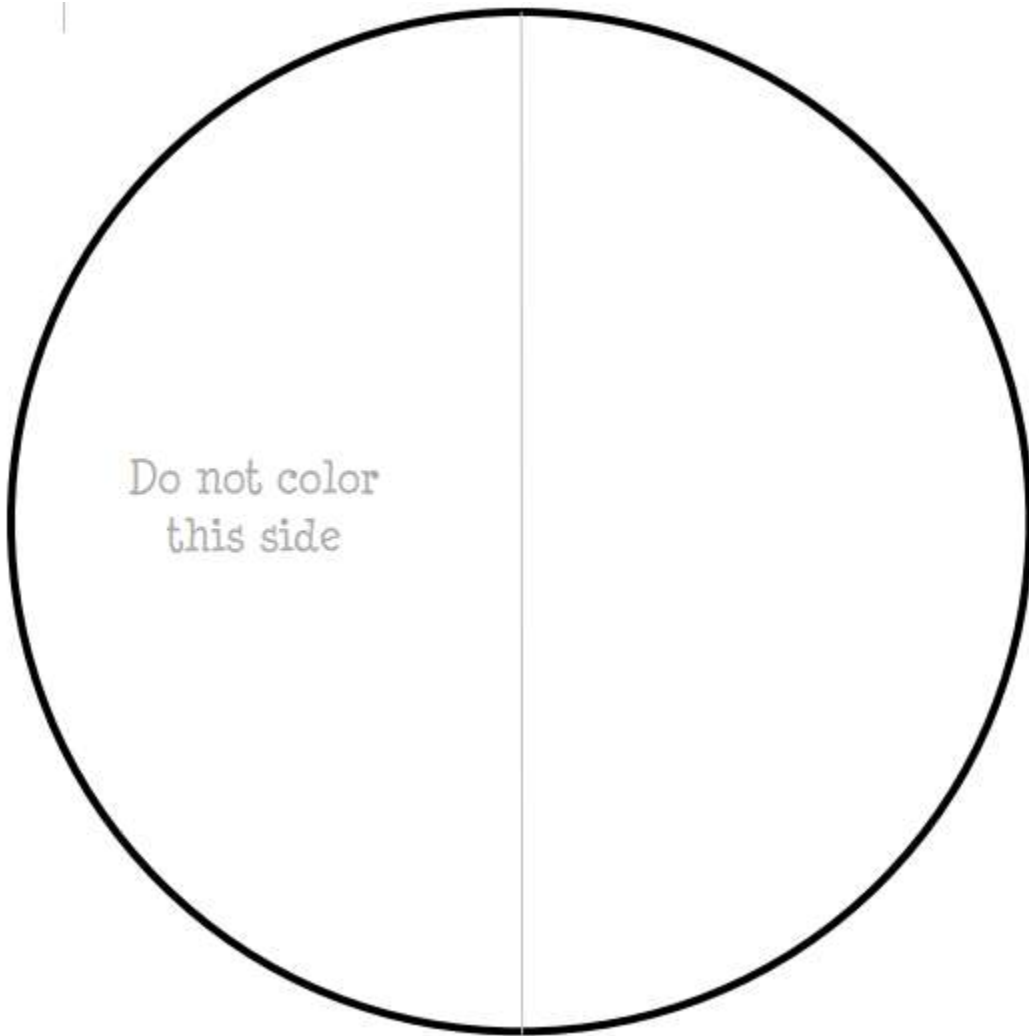
<div style="border: 1px dashed black; padding: 5px; margin-bottom: 10px; text-align: center;"> <p><b>Outer Core</b> 2,266 km thick</p> </div> <div style="border: 1px dashed black; padding: 5px; margin-bottom: 10px; text-align: center;"> <p><b>Crust</b> 5-70 km thick</p> </div> <div style="border: 1px dashed black; padding: 5px; margin-bottom: 10px; text-align: center;"> <p><b>Inner Core</b> 1,216 km thick</p> </div> <div style="border: 1px dashed black; padding: 5px; text-align: center;"> <p><b>Mantle</b> 2,867 km thick</p> </div>	<p>Outer core</p> <div style="text-align: center; margin-top: 20px;">  <p style="color: grey; font-size: 1.2em;">Do not color this side</p> </div>
--	--



Inner Core



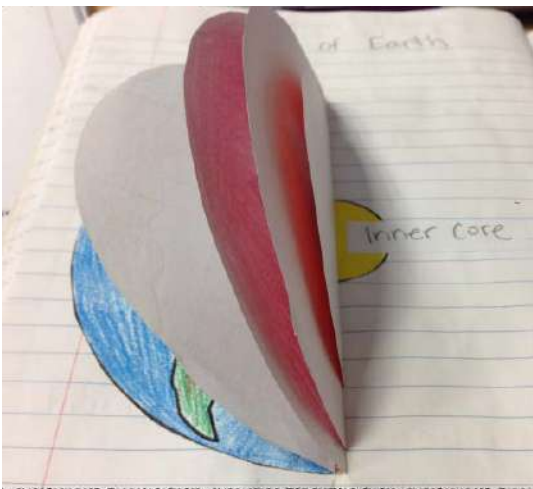
Mantle



Crust



Exterior View



example of how to glue it all together. Take a picture or two of your project and send it to me if you want to submit digitally.