

# Thursday, January 31, 2019

Your Learning Goal: Students will observe electromagnetic fields with the aid of a compass and simple circuit making connections between that and the magnetic field on Earth.

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Electricity and Magnetism- 30L + R

Catalyst (30L): When walking around outside with the compass, where does it point? What is it pointing to?



Homework:  
Complete the LEAF paragraph



Agenda:

1. Catalyst
2. Simple Circuit
3. Electricity and Magnets
4. LEAF

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<u>Date</u>	<u>Assignment</u>	<u>Pg #</u>
1/22/19	A Planet is Born	27L + R
1/24/19	Scaling the Planets	28L + R
1/29/19	Spatial Attraction	29 L+ R
1/31/19	Electricity and Magnetism	30 L + R

Catalyst:

When walking around outside with the compass, where does it point? What is it pointing to?

**30L**

1/31/19

Electricity and Magnetism

**30R**

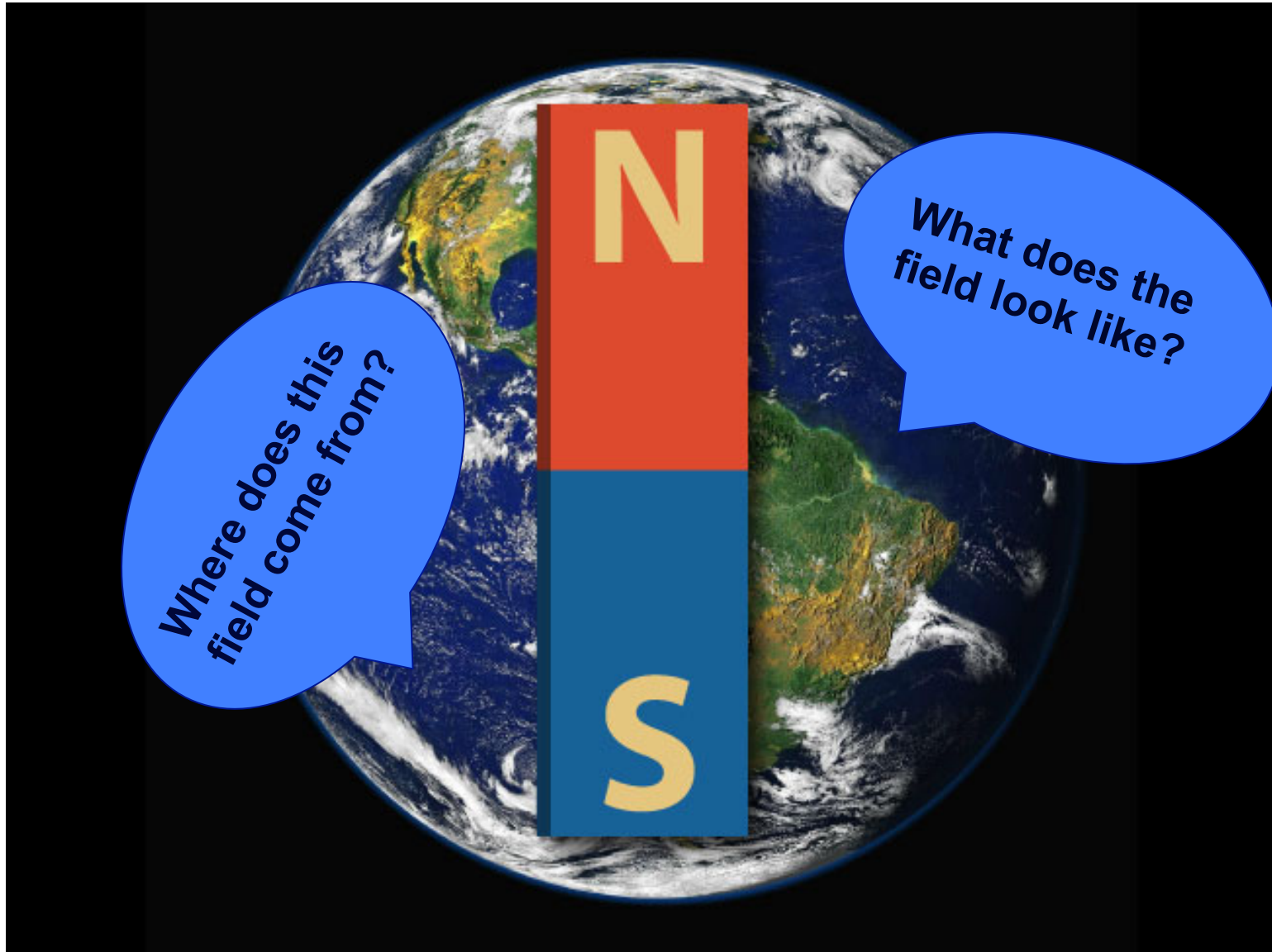
Let's walk around with the compass

Does your compass behave in the same way all the time?

Does anything seem to interfere with your compass?

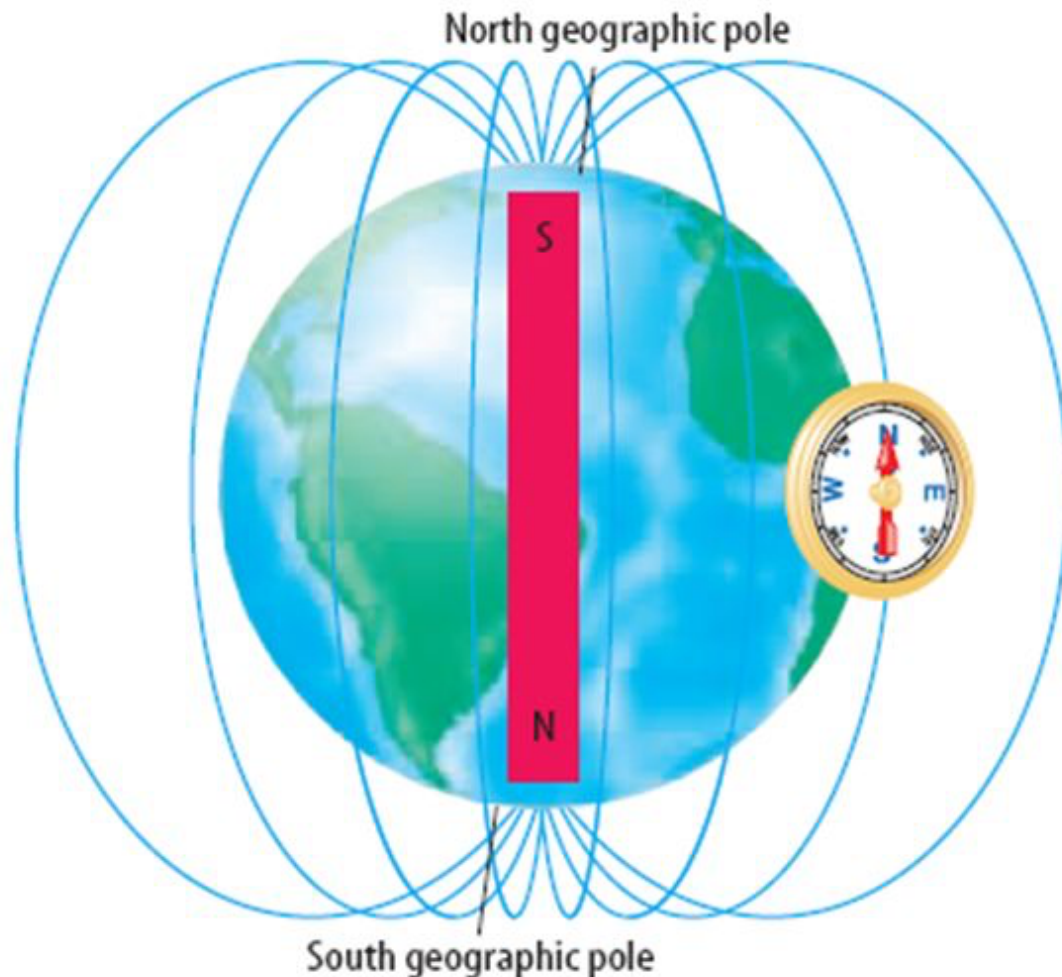
What do the objects that interfere with your compass have in common?

# Earth's Magnetism in 3D



# The earth is like a giant magnet!

The nickel iron core of the earth gives the earth a magnetic field much like a bar magnet.



Because the Earth's magnetic North Pole attracts the "north" ends of other magnets, it is technically the 'south pole' of our planet's magnetic field.

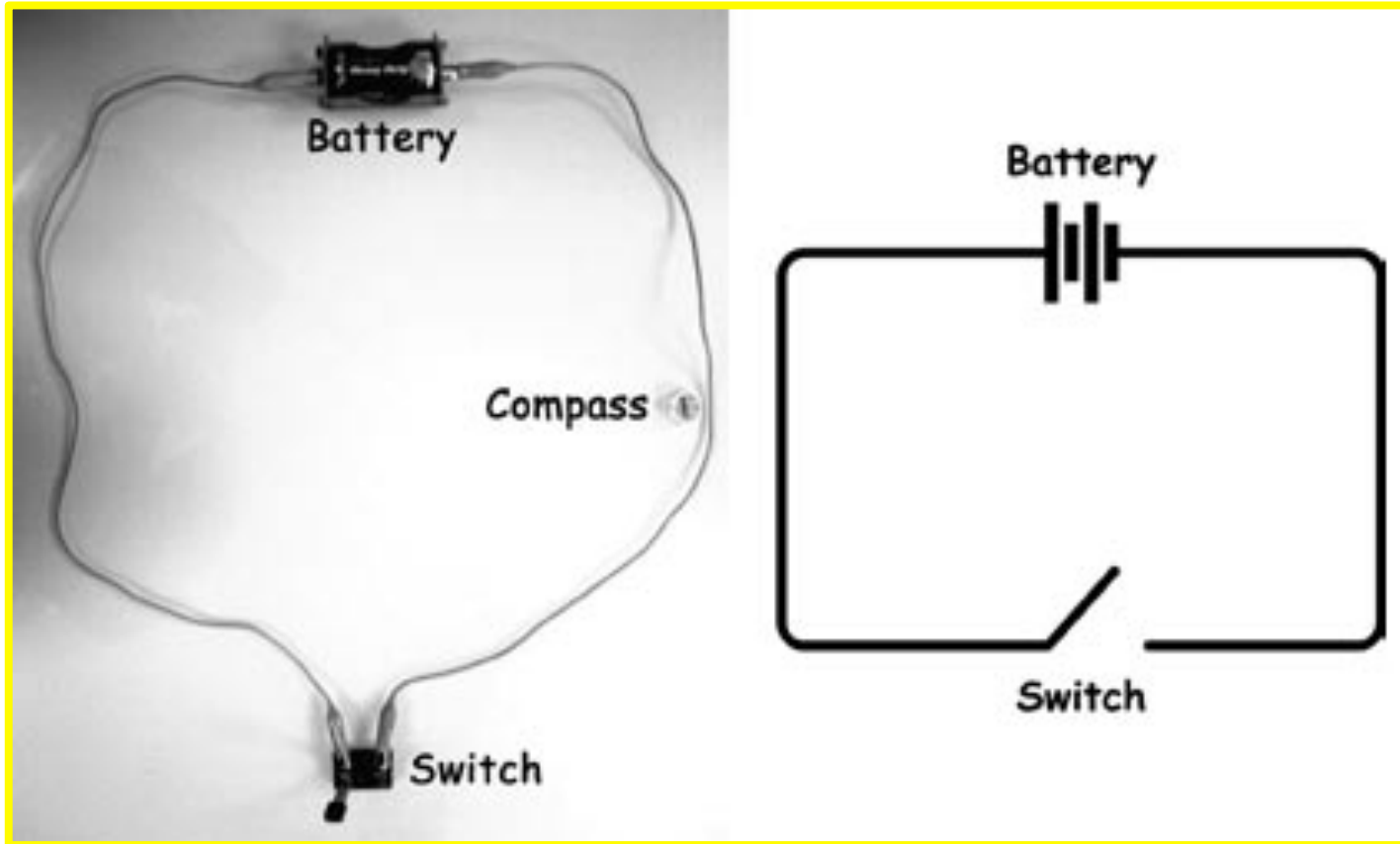
How do compasses work?



# So What is a Magnet?



# Simple Circuits



1. AA Battery
2. Compass
3. 2 Alligator Clips + Insulated Wire
4. Knife Switch

**30R**



**Catalyst:**

When walking around outside with the compass, where does it point? What is it pointing to?

**30L**

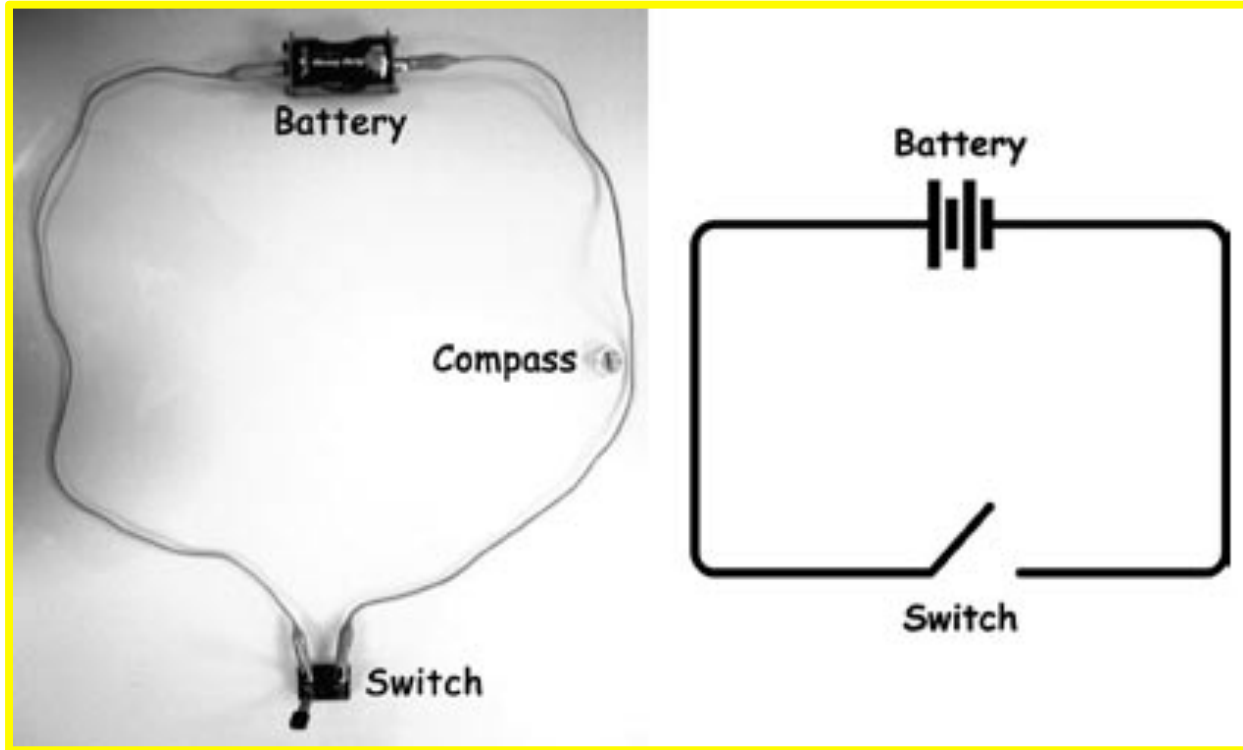
1/31/19

**Electricity and Magnetism**

Draw your circuit HERE

**30R**

# Simple Circuits



- Set up your circuit as seen in the image above
- Move your compass around the circuit (switch off)
  - What do you observe?
- Move your compass around the circuit (switch on)
  - What do you observe?

**30R**

## Catalyst:

When walking around outside with the compass, where does it point? What is it pointing to?

## LEAF:

How have you seen evidence of Earth's magnetic field. Use the lab examples + videos from class as evidence.

**30L**

1/31/19

## Electricity and Magnetism

Draw your circuit HERE

**30R**