Online resources S8P5 Force Fields (Elec, Mag, Gravity)

S8P5. Obtain, evaluate, and communicate information about gravity, electricity, and magnetism as major forces acting in nature.

a. Construct an argument using evidence to support the claim that fields (i.e., magnetic fields, gravitational fields, and electric fields) exist between objects exerting forces on each other even when the objects are not in contact.

FIELDS:

- Gravitational Field https://share.nearpod.com/QVsOIXW6FV
  - Interactive https://www.physicsclassroom.com/Physics-Interactives/Circular-and-Satellite-Motion/Gravitational-Fields/Gravitational-Fields-Interactive
- Magnetic Field https://share.nearpod.com/p5AMTipyEV
  - Interactive https://www.physicsclassroom.com/Physics-Interactives/Magnetism/Magnetic-Field/Magnetic-Field-Interactive
- Electric Field https://share.nearpod.com/8nGmLRO7FV
  - Interactive https://www.physicsclassroom.com/Physics-Interactives/Static-Electricity/Electric-Field-Lines/Electric-Field-Lines-Interactive

Gravitational Field
https://www.physicsclassroom.com/Physics-Interactives/Circular-and-Satellite-Motion/Gravitational-Fields/Gravitational-Fields-Interactive

Magnetic Field
http://sciencenetlinks.com/lessons/exploring-magnetic-fields/

Online resources S8P5 Force Fields (Elec, Mag, Gravity)

Standard:

S8P5. Obtain, evaluate, and communicate information about gravity, electricity, and magnetism as major forces acting in nature.

b. Plan and carry out investigations to demonstrate the distribution of charge in conductors and insulators. (Clarification statement:Include conduction, induction, and friction.)

CHARGES:

Static Electricity
https://www.physicsclassroom.com/class/estatics/Lesson-1/Conductors-and-Insulators

- Interactive
https://www.physicsclassroom.com/Physics-Interactives/Static-Electricity/Charging/Charging-Interactive
- Interactive https://phet.colorado.edu/en/simulation/john-travoltage

ELECTROMAGNETS:

Introduction to Electromagnets https://youtu.be/TTFIXmubvkQ

- Interactive to show # of dry cells (batteries) to lift weights
https://www.classzone.com/books/ml_science_share/vis_sim/emm05_pg77_electromag/emm05_pg77_electromag.html

Online resources S8P5 Force Fields (Elec, Mag, Gravity)

Standard:
S8P5. Obtain, evaluate, and communicate information about gravity, electricity, and magnetism as major forces acting in nature.

c. Plan and carry out investigations to identify the factors (e.g., distance between objects, magnetic force produced by an electromagnet with varying number of wire turns, varying number or size of dry cells, and varying size of iron core) that affect the strength of electric and magnetic forces. (Clarification statement: Including, but not limited to, generators or motors.)

ELECTROMAGNETS:
Introduction to Electromagnets https://youtu.be/TTFIXmubvkQ
- Interactive to show # of dry cells (batteries) to lift weights
https://www.classzone.com/books/ml_science_share/vis_sim/emm05_pg77_electromag/emm05_pg77_electromag.html

ARGUMENT-DRIVEN INQUIRY (ADI)
Lab 6. Strength of Gravitational Force: How is distance and mass related to the strength of gravitational forces?

ADI:

Lab 6 , Lab 10 , and Lab 11
https://drive.google.com/open?id=1dUqDOhHSAv24lpbNPaJBuPWW85w0tQqt

GADOE: "Seeing is Believing"
The following link is provided by the GADOE. It has resource links embedded in the document for example ck-12 resources.
Eighth Grade Instructional Segment: Force Fields

Pacing Guide for "Seeing is Believing"

GADOE: Interactions with Energy and Matter

Pacing Guide for "Interactions with Energy and Matter