Summary Table - Group #3 Names: Christina, Jen, Rachel

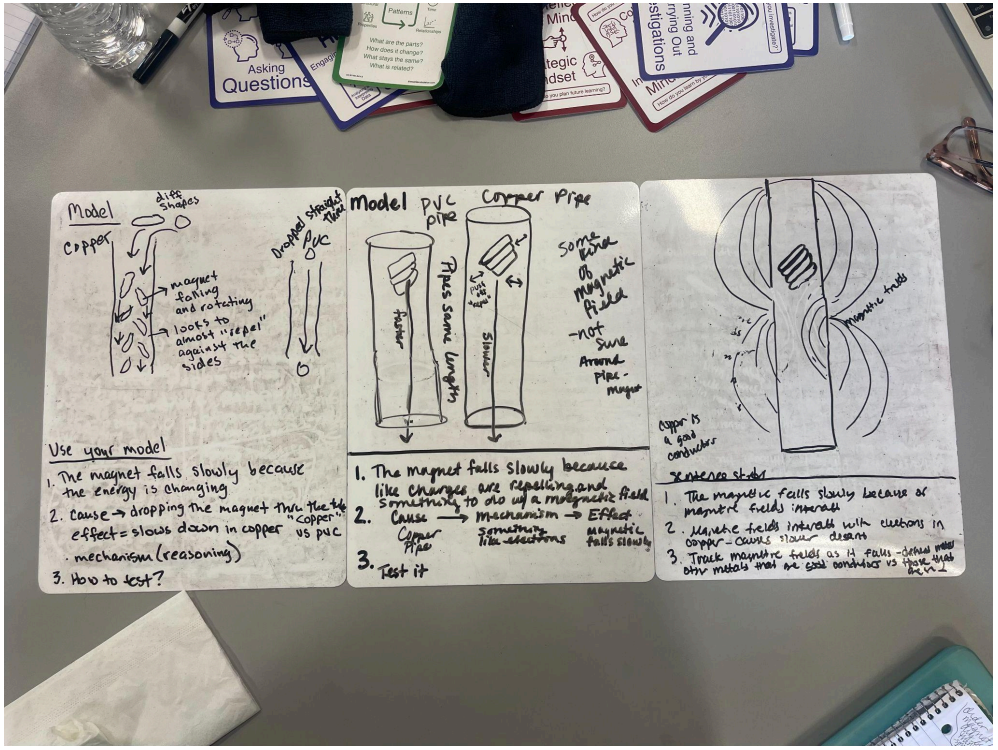
Phenomenon: Magnet in Copper Pipe

Guiding question:
What causes a magnet to slow down when falling through a copper pipe?

Supporting phenomenon	Link to work	What we did	What we figured out	How does this connect to the phenomenon
The Blocks	Link	Claim = Cause = When put together Evidence = Effect: Red can stand Reasoning = mechanism = Magnet under platform small magnet in red. Always draw what you can see first.	Center of gravity - Push and pull forces - Contact (pushing/pulling) vs non-contact forces (magnetism) Magnetic pull, kept Red upright. Not affected by the green block.	Explored effects of magnetism and forces. Forces, specifically gravity, with the magnet falling through the copper pipe. Discussed applied forces, push/pull/.
The Play	Link	Test magnets through various materials - average speed through each tube over 3 trials listed. 1 Magnet = Aluminum (square) large magnets 0.59 s = PVC (small magnet) 0.33 s = copper 1.96s	More Magnets moved slower. Aluminum had some effect but not as much as the copper. PVC had no effect. None of the materials were magnetic.	We did further testing. Confirms that it is caused by the copper pipe. Confirms that other materials can have a similar effect (if even a significantly less effect).

The Dancer	Link	Created a System Model of the Dancer. Testing: Components moved together (top and bottom of dancer) Saw the components (dissection). Saw a video of the components working - without the hula dancer	Copper wire can conduct electricity - creates an electromagnetic field when electricity flows through the copper wire. Electromagnetic field is able to repel the magnet.	We have learned that copper can conduct electricity and create an electromagnetic field. Copper can convert energy from electrical energy to electromagnetic energy.
The Launch	Link	Metal spheres on one end of a rod with magnets on each end. 2 metal spheres on on end, on the other one metal sphere was placed closer to it. When it hits, a sphere on the other end was launched off the ruler.	Converting potential magnetic energy (magnetic field energy) into kinetic energy. Magnetic field has a decreased effect as you move further away. Visualize magnetic field with metal filings.	Magnetic fields are capable of converting to kinetic energy, resulting in movement.
The Wand	Link	Metal detector	Electrical current making a field, - makes an electrical current. - Magnet can make a field and generate a field - can be anything that conducts electricity. -	Any magnet can generate a magnetic field in anything that can conduct electricity, which generates a magnetic field. These opposing magnetic fields can repel each other, opposing the force of gravity as the magnet drops.

Initial Model



Final Model

The Blocks - Back to summary table

Show your work below (i.e. text, model images, questions, data etc.)

The Play - Back to summary table

The Dancer - Back to summary table

Show your work (i.e. text, model images, questions, data etc.)

The Launch - Back to summary table

Show your work (i.e. text, model images, questions, data etc.)

The Wand - Back to summary table

Show your work (i.e. text, model images, questions, data etc.)

