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| --- | --- | --- |
| **Stage 1 Desired Results** | | |
| ESTABLISHED GOALS - #1  **3-PS2-1. Provide evidence to explain the effect of multiple forces, including friction, on an object. Include balanced forces that do not change the motion of the object and unbalanced forces that do change the motion of the object.** [Assessment Boundary: Assessment is limited to one variable at a time: number, size, or direction of forces. Assessment does not include quantitative force magnitude, only qualitative and relative. All descriptions of gravity are limited to a force that pulls objects down.]  **3-PS2-3. Conduct an investigation to determine the nature of the forces between two magnets based on their orientations and distance relative to each other.** [Assessment Boundary: Assessment is limited to forces produced by magnetic objects that can be manipulated by students.]  **3-PS2-4. Define a simple design problem that can be solved by applying the use of the interactions between magnets.\*** [Clarification Statement: Examples of problems could include constructing a latch to keep a door shut and creating a device to keep two moving objects from touching each other.] | ***Transfer*** | |
| *Students will be able to independently use their learning to* | |
| ***Meaning*** | |
| UNDERSTANDINGS  *Students will understand that…*   1. Balanced forces don’t change the motion of an object 2. Unbalanced forces do change the motion of an object 3. The orientation of two magnets affect their interaction | ESSENTIAL QUESTIONS  *Students will keep considering…*  What causes objects to move?  What causes an object to stop moving?  What affects the way two magnets interact? |
| ***Acquisition*** | |
| KNOWLEDGE  *Students will know…*  Gravity’s constant pull affects all objects  Less friction speeds up the motion of an object; more friction slows it down.  The orientation of two magnets poles determine whether they attract or repel each other | Science Practice  #8 Obtaining, evaluating and communicating information |

**Table 3: *Stage Two***

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| **Stage 2 – Evidence** | | |
| **Coding** | **Evaluative Criteria** | **Assessment Evidence** |
|  |  | PERFORMANCE TASK(S):  Draw and label the two magnets used (poles N and S)  Document observations:   * Description of each orientation (e.g. N → N) * Explain the interactions, using key vocabulary words / word bank   Observation of a book at rest on a table, being pushed across the table and then falling off the table |
|  |  | Suggested Resources: |