Lesson 5-6 Sledding

**Objectives:**

1. Finalize Re-designs
2. Reflect on engineering sleds
3. Perform final tests
4. Measure distance traveled
5. Measure time in seconds
6. Observe what engineers do.

**Materials**

Extra pebbles recycled materials for sleds Tools

Video clips from pbs kids Dragonflytv http://pbskids.org/dragonflytv/scientists/index.html

**Prep**Test on digital scopes
Create heavy sled and test with and without pebbles- make it too heavy!
Print student test sheets

**Procedure**

Engineer Careers: During down time, have the children choose an engineer and watch a 2-3 minute video clip. Ask- what they liked? What did the engineer do? Video clips from pbs kids Dragonflytv http://pbskids.org/dragonflytv/scientists/index.html

**Concept Application**

1. Goals
2. What we learned and what we need to do from our sled tests

Our ideas from discussion:

* 1. *Some were unsafe*
	2. *Sturdier gliders*
	3. *Add more weight*
	4. *Others?*
1. Or are some sleds too rough on the bottom and creating friction?
2. Work on sleds
3. Retest! Our ideas for what we need to do to make them faster
	1. Big hill
	2. Extra weight?
4. Testing
	1. Assign jobs in groups of 3: recorder, measurer, tester
5. Reflecting
	1. Review engineering design and discuss from weeks 1-5 what we did as engineers
	2. Reflect and draw or write their favorite part of engineering



What I liked most about engineering

Interview/Discussion Progress Checklist

(Teacher observations and assessment during lessons 3-6)

|  |  |  |
| --- | --- | --- |
| FORCES | Completes task with assistance | Completes task independently |
| Can give an example of a force  |  |  |
| Can describe force as push or pull  |  |  |
| Can describe how objects move  |  |  |
| Can tell gravity is the force that moves the sled down hill  |  |  |
| Can tell identify friction as a force that slows motion* Mention smootheness
* Mention roughness
 |  |  |
| Sled Engineering |  |  |
| Can identify where friction happens on moving sled |  |  |
| Can explain what materials help prevent friction  |  |  |
| Can explain where extra weight is placed to make a sled move fast |  |  |
| Can explain how the sled stays balanced |  |  |

Other Skills Science With assistance Independently

|  |  |  |
| --- | --- | --- |
| Communicates ideas clearly |  |  |
| Makes predictions based on evidence |  |  |
| Reads tape measure properly |  |  |
| Writes numbers |  |  |
| Draw inferences based on evidence |  |  |
| Makes observations |  |  |