#### PBL Unit 1 Phys Ess





#### Tuesday September 18th 2018

#### DO NOW

Who is someone you look up to? What are some qualities of this person?

#### PBL Unit 1 Groups

Group 1: Caleb, Isaiah, Briana, Elaina

Group 2: Lazaria, MJ, Jared, Isabella

Group 3: Bree, Shamya, Rolin, Jamire, Troy

Group 4: Zion, Amari, Daveyonna, Tyler

Group 5: Kamaria, Josh, Kayden, Jhoana

Group 6: Jesse, Keniah, Joe, Yahir

#### Bridge Activity

You have 4 pieces of paper and tape the length of a hand.

You must create a bridge that will move a ball across without pushing the ball to get it started.

You have 7 minutes.

#### Debrief

Jobs

**Resource Manager:** Get supplies and cleans up area at the end of the day. Makes sure all members brings in supplies. Contacts groups if needed.

**Facilitator:** Gets someone (or themselves) to read the task. Makes sure everyone understands the task. "Who wants to read?" "What does the first question mean?" "Do we all agree?" "I'm not sure I get it yet – can someone explain?"

**Recorder/Reporter:** Shares out with class and teacher. Asks if other students understand the information. "Does everyone understand what to write?" "How should we show our answer on this poster?" "Can we show this in a different way?" "What does each person want to explain in the presentation?"

**Task Manager:** Keeps the group focused on the task for the day. "Ok, let's get back to work!" "Let's keep working." "What does the next question say?" "Explain how you know that." "Can you prove that?" "Tell me why!"

**Team Leader** (also has another job from top): Keep the group on task, assure work is done by all, gets needed materials and is the liaison between their group and other groups and between their group and the instructor. The leader should manage the project and not miss more than 2 days of school without a legitimate excuse (suspension is not legitimate).

#### Team Contract

- Jobs
- 3-5 or more promises your group will make to each other
- How you will communicate with each other (text, groupme, etc)

#### Consequences within Groups

- Not completing tasks on time
- Being off task to the point it is distracting
- Distracting other groups
- Absent for an extended period of time (2+ days) with no communication with group

#### Consequences in Groups

- 1) Warning within a group (Team Leader talks to teacher)
- 2) Sit down with group and students to discuss problem and solution with written solution3) Second sit down with group and discussion of
  - solution-possibility of student fired from group

#### DO NOW

### What do you think of when you hear the word "rocket"? List everything.

### Driving Question

How can we create a rocket that goes the highest and falls safely to the ground?

#### How will we achieve this?







#### Need to Knows

Brainstorm with your group- What do we need to know for this project?

#### Need to Knows- Whole Class

#### Brainstorm-You Must Log

Ideas for your bottle Base, water is provided Amount of water can be changed

#### Distance and Displacement Content (Mini Lecture)

#### **Physics Essentials Do Now**



- You walk from School to Kogi's House. What is your distance and displacement?
- You walk from School to Kosma's and back to school.
   What is your distance and displacement?

#### **Distance and Displacement Lab**

- You will be assigned a random partner
- 1 walker, 1 measurer
- Follow the directions exactly!
- You should get through Part 1 and start
   Part 2 today in class.

How do we measure with a meter stick?

#### **Physics Essentials Do Now**

 Ally runs north 6 meters and south 10 meters. Draw her path. What is her distance? Displacement?
 Hannah drove 10 meters north and 3 meters south. Draw her path. What is her distance?

Displacement?

# Sit with your PBL

## groups

#### Monday Checkpoint Quiz

The person travels from A to B.

 a) What is the distance?
 b) What is the displacement traveled?

 The person travels from A-B-C-D.

 a) What is the distance?
 b) What is the displacement traveled?

 The person travels from A-B-C-D.

 a) What is the displacement traveled?

- a) What is the distance?
- b) What is the displacement traveled?



#### **Team Meeting**

- How distance and displacement will help your project
- What you can change
- Ideas for design
- Materials to bring in

#### DO NOW

#### SIT WITH YOU PBL GROUPS

How can we use distance and displacement in the project?

What are some additional things you need to know about the project?

#### Do Now

Sit with your partner from the motion lab.

- If I walk 20 steps forward in 7 seconds, what is my distance and displacement? Time?
- If I walk 20 steps forward and 10 steps back in 12 second what is my distance and displacement? Time?

#### To Do Today

- Word Problems
- Team Meeting
- Organize Binder
- Finish Part 1 and 2 from Lab (only)
- Get 2 Challenge worksheets for practice for tomorrow in class

--If Joey throws a football 50 m in 3 seconds, what is the average speed of the football?

#### **Physics Essentials Do Now**

You run around a track that is 400 m long in 40 seconds. You start and stop in the same place. What is your speed? Velocity?

Knowns:

Looking For:

Equation:

Solve:

#### Today's Agenda

- Organize Binder (if you don't have one you need one)
- Review speed and velocity
  - $\circ$  What do we need to know to find out the average speed of our rocket?
- Team Meeting
  - Material Storage
  - $\circ$  Review of our contract
  - $\circ$  Review of jobs
  - Goal
  - $\circ~$  Plan for first 3 iterations of design
- Share Out
  - $\circ$   $\,$  Goal and Design Ideas  $\,$

#### Today's Agenda

 Warm Up Quiz
 Group Challenge
 Get new papers for group
 Work time in lab and teacher meeting

#### **Group Challenge**

- We are currently at 850 ft elevation. Your rocket goes up to 874 ft. What is the distance is travels? Displacement?
- Your rocket takes 2.9 seconds to reach the top. What is the speed?
- Your rocket takes 4.9 seconds to teach the bottom. What is your speed?

#### Do Now

## What do you think of when you hear the word **force**?

#### Do Now

- Sit with your PBL Groups
- Resource Manager- go into lab and get your clipboard

#### PBL Unit 1 Groups

Group 1: Caleb, Isaiah, Briana, Elaina Group 2: Lazaria, MJ, Jared, Isabella Group 3: Jesse, Keniah, Joe, Yahir, Aisha Group 4: Zion, Amari, Daveyonna, Tyler

Group 5: Kamaria, Josh, Kayden, Jhoana

Group 6: Bree, Shamya, Rolin, Jamire, Troy

#### **Group Meeting**

### 10 minutes- use your graphs to complete the information on your iteration sheet

Sit with your PBL groups. Working as an individual (ask me or a PBL member for help)

#### Do Now

A person pushes a box with 100 N to the right and another person with 150 to the left.

- Draw a Free Body Diagram of the situation
- What is the Net Force on the box?
- What direction is the Net Force?

#### Agenda

- 1. Turn In Do Now Sheet
- 2. Binder Organization
  - a. Binder "Check" Monday
- 3. PhET Lab
- 4. Net Force/Free Body Diagram Worksheets

#### Reminders:

Forces Checkpoint Quiz Monday

Project Work Days Monday and Tuesday

Launch Wednesday!

#### Weekly Agenda

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Monday- Catch Up Day

Tuesday- Team Work Day

Wednesday- Launch Day #2

Thursday- Newton's Laws

Friday- Newton's Laws

#### Today's Agenda

- 1) New Seats
- 2) Forces Open Note Quiz will be TUESDAY
- 3) Binder Check
- 4) "Catch Up" to work on Binder and other individual components of project

During this time we are

- Working quietly
- Focused
- Talking to only our partner or teacher

#### Sit with your new partner in a new area of the classroom!

Caleb, Isaiah

Briana, Elaina

Lazaria, MJ

Jared, Isabella

Zion, Daveyonna

Kamaria, Josh

Keniah, Joe, Jesse Aisha, Yahir Amari, Tyler Kayden, Jhoana Jamire, Troy Bre, Shamya, Rolin

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#### Physics Essentials Do Now

Sit in your same seat as yesterday.

Take out your binder and pencil for your Forces Checkpoint Quiz.

### Driving Question

How can we create a rocket that goes the highest and falls safely to the ground?

#### PBL Goals Today

Create your next 2 iterations- focus on how much water and how you will make it go farther.

You need 2 iteration forms AND a teacher meeting form.

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Sit with you PBL Groups. Materials Manager- Get your clipboard from next door

## 10 minutes- work on filling out your forms.

#### Newton's Laws Mini Labs

Take out a notebook paper and fold into 4's. Must complete 4 stations from each law.