1/16/2018

Review of Previous Lesson

- State as many Vocabulary words and Learning Objectives that you remember from the last lesson as you can.
- Now complete the content learning objectives.
- Remember to grade yourself from 0 – 3.

1

1/16/2018

Work, Force & Displacement

2

1/16/2018

Vocabulary

Content:	Start	End
Work Done		
base units		
equation/relationship		
energy		
Joule		
rearrange		
scenario		
force		

3

1/16/2018

Vocabulary

Language:	Start	End
state		
identify		
explain		
definition		
equation/relationship		
rearrange		
calculate		
derive		
various		
scenarios		
definition		

4

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Learning Objectives

Grade 7

Content:	Start	End
State the definition of **Work**.		
Identify the conditions for work to be done.		
Explain work needed to lift an object.		
State the equation/relationship for **Work Done** and rearrange to solve for force or displacement.		
Derive base units of a **Joule**.		
Calculate **Work Done** in various scenarios.		

5

1/16/2018

Learning Objectives

Grade 8

Content:	Start	End
State the definition of **Work**.		
Use the full equation for work ($W=Fd\cos(\theta)$) and be able to describe the effect of the directions of the forces on the work done on an object.		

6

1/16/2018

Learning Objectives

Language:	Start	End
Define, identify and state verbally and in writing.		
Calculate in writing.		

7

1/16/2018

State the definition of **Work**.

- When a force acts upon an object to cause a displacement of the object, it is said that work was done upon the object.
  - http://www.physicsclassroom.com/Class/energy/u5l1a.cfm

8

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Identify the **conditions for work to be done**.

- In order for a force to qualify as having done *work* on an object, there must be a **displacement** and the force must *cause* the displacement.
  - http://www.physicsclassroom.com/Class/energy/u5l1a.cfm

9

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Identify the **conditions for work to be done**.

- Read the following five statements and determine whether or not they represent examples of work.
- Then click on the See Answer button to view the answer.
  - http://www.physicsclassroom.com/Class/energy/u5l1a.cfm

10

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State the **equation/relationship** for **Work Done** and rearrange to solve for force or displacement. Calculate Work Done in various scenarios.

https://www.youtube.com/watch?v=JHEmPZ-YnrU

11

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Explain work needed to lift an object. Calculate Work Done in various scenarios.

https://www.youtube.com/watch?v=MXtt4C543-8

12

Grade 7

1/16/2018

Work Done

- W = Fd
  - W = Work Done [Joules (J) or Nm]
  - F = force (N)
  - d *(sometimes s)* = displacement in the direction of the force (m)

- http://physics.fisikastudycenter.com/junior-high-school-physics/82-10-common-problems-of-work-and-power-junior-physics
- http://www.sparknotes.com/physics/workenergypower/review/quiz.html

13

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Problems and Solutions: Work Done Only – Grade 7:

- Problems of Work and Power - Junior Physics (Physics Learning Center)
- Physical Science: Work Quiz (SoftSchools.com)
- Work and Energy Quiz (SoftSchools.com)
- Work and Power Quiz (thatquiz.org)
- Review of Work, Energy and Power (sparknotes)
- Work, Energy & Power: Quiz (goconqr.com)

16

Grade 8

1/16/2018

Work Done

- W=Fd cos(θ)
  - W = Work Done [Joules (J) or Nm]
  - F = force (N)
  - d *(sometimes s)* = displacement in the direction of the force (m)
  - θ = the angle between the force and the displacement vectors

- http://www.physicsclassroom.com/class/energy/Lesson-1/Calculating-the-Amount-of-Work-Done-by-Forces

14

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Problems and Solutions: Work Energy Theorem – Grade 8:

- Exercises on Work-Energy Theorem (gauss.vaniercollege.qc.ca)
- Problems (theory.uwinnipeg.ca)
- Net Work & Kinetic Energy (clutchprep.com)
- More Work-Energy Problems (clutchprep.com)
- Work and Power (sparknotes.com)

17

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Derive base units of a **Joule**.

- One Joule is equivalent to one Newton of force causing a displacement of one meter. In other words,
- The **Joule** (**J**) is the unit of work.
  - W = Fd
  - 1 Joule = 1 Newton * 1 metre
  - 1 J = 1 N * m

15