ORANGE PUBLIC SCHOOLS
OFFICE OF CURRICULUM AND INSTRUCTION
OFFICE OF SCIENCE

GRADE 5
SCIENCE

I-Check 3

Unit 2:

Levers and Pulleys

School Year 2014-2015

Directions for Grade 5 I-Check 3

The Grade 5 I-Check is made up of multiple choice questions, constructed response questions and performance questions.

Read each question carefully, including diagrams and/or graphs.

Work as rapidly as you can without sacrificing accuracy. Do not spend too much time puzzling over a question that seems too difficult for you. Answer the easier questions first; then return to the harder ones. Try to answer every question, even if you have to guess.

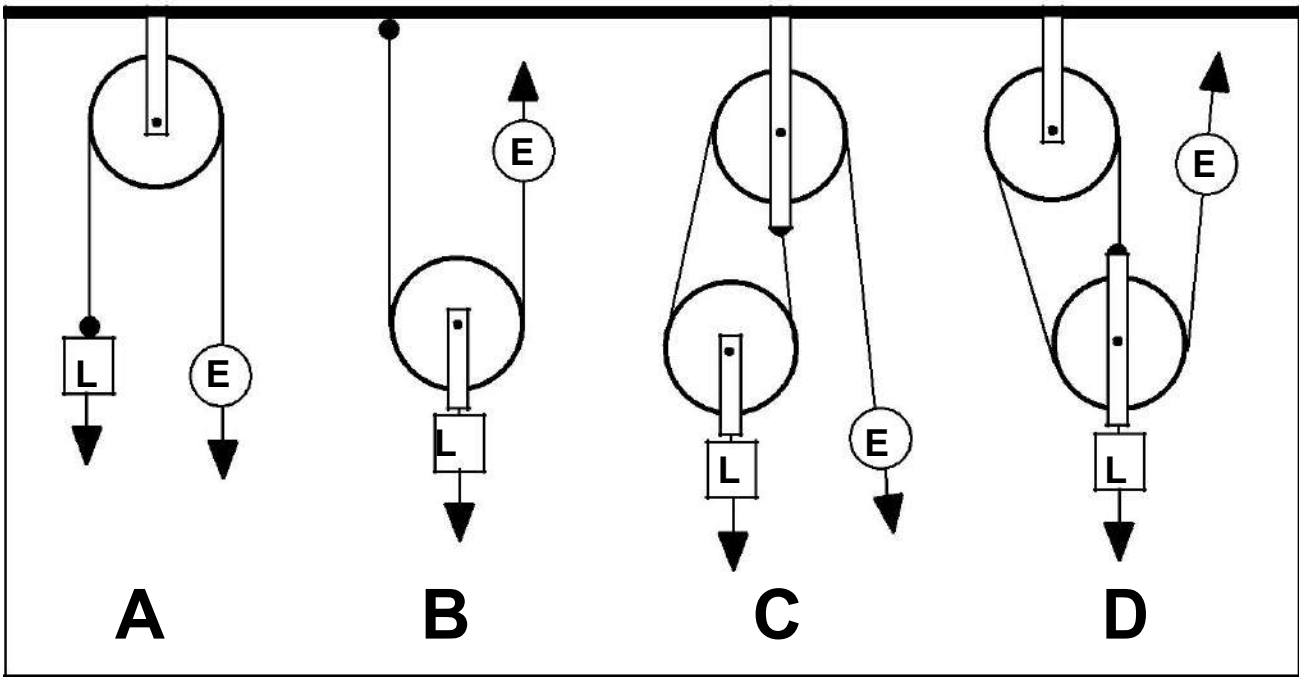
Where necessary, you may use scratch paper for your work. Do not use the margins of the test booklet to do scratch work.

FOR ALL QUESTIONS, YOU MUST RECORD ALL OF YOUR ANSWERS ON THE TEST BOOKLET.

I-CHECK

Investigation 3—Pulleys

Name
Date



29. Look at the illustrations above. Which pulley system provides only a directional advantage?

(Circle the one best answer.)

A. pulley system A

B. pulley system B

C. pulley system C

D. pulley system D

Name

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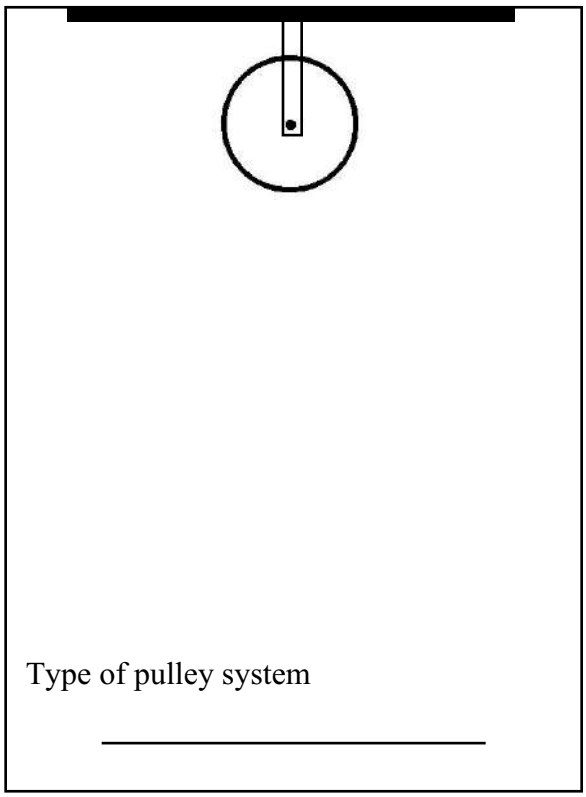
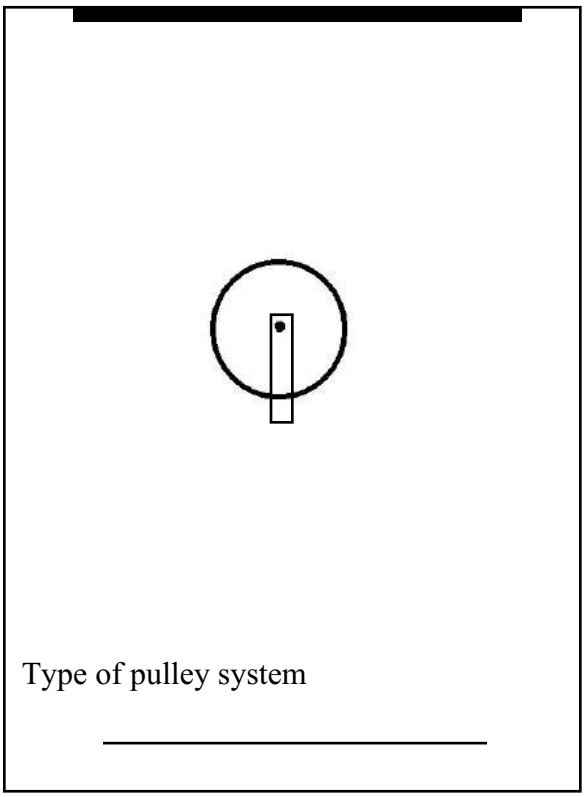
Investigation 3—Pulleys

30. • Using the pulleys below, draw in the rope, load, and effort to show two ways to set up a single-pulley system.
    - Draw arrows showing the direction of force of the effort and the load.
    - Write the name of the type of pulley system at the bottom of each box.



Type of pulley system

_____



Type of pulley system

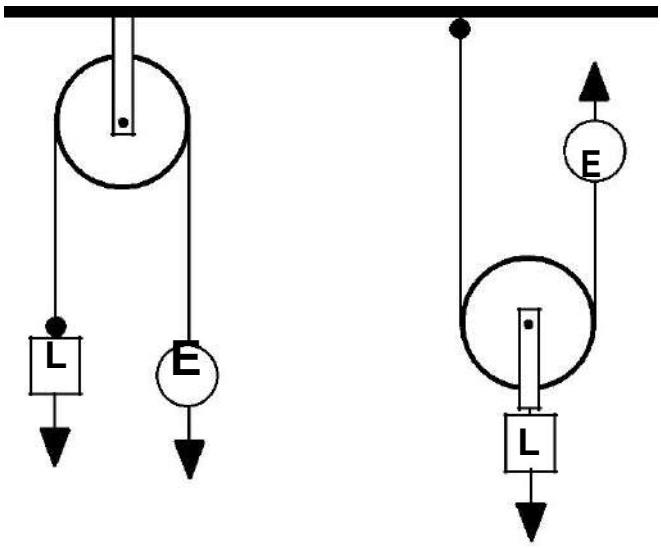
_____

Name

I-CHECK

Investigation 3—Pulleys

31. When the pulley system on the left (below) is used to lift the load, the effort required is 30 N. What is the effort required to lift the same load using the pulley system shown on the right?



(Circle the one best answer.)

A. 3 N

B. 15 N

C. 30 N

D. 60 N

32. Chloe has two pulleys, lots of rope, and a 60-kg boulder that needs to go onto a truck.

a. Draw the pulley system that would give Chloe the greatest mechanical advantage, given the equipment she has. You don't need to draw the boulder and truck, but you do need to

Label the load and the effort.

Draw arrows showing the direction of the force of the effort and the load.

b. What type of pulley system did you draw?

_____

Name

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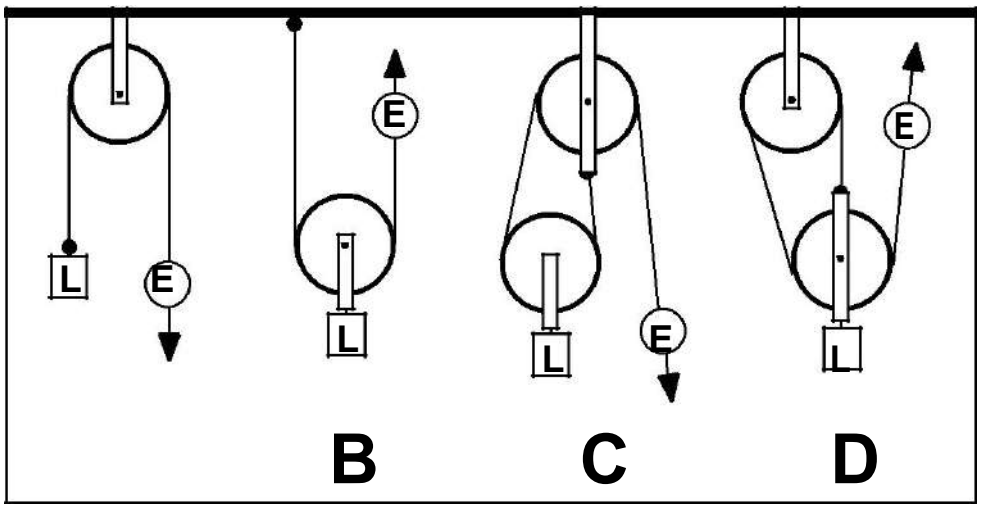
Investigation 3—Pulleys

33. Which pulley system will provide the greatest mechanical advantage?



(Circle the one best answer.)

A. pulley system A

B. pulley system B

C. pulley system C

D. pulley system D

34. Fill in the missing information on the table below.

Pulley system	Load (N)	Direction of pull	Scale reading	Effort (N)
Single-fixed	50 N			
Single-movable			25 N	

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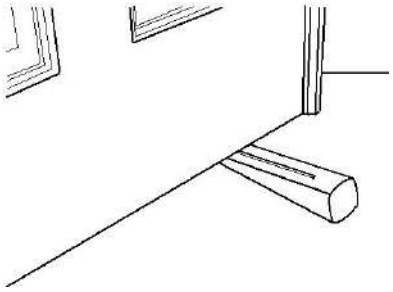
3—Pulleys

35. A doorstop is a simple machine. Which type is it?



(Circle the one best answer.)

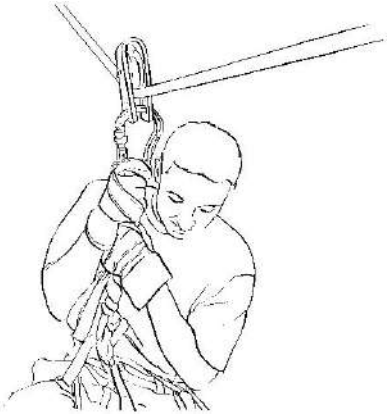
A. wedge

B. wheel and axle

C. lever

D. inclined plane

36. A zip line uses a simple machine to move people from one place to another on a cable. What simple machine is used to move people along the zip line?



(Circle the one best answer.)

A. wedge

B. screw

C. pulley

D. inclined plane

37. How much effort is required to lift the load in this lever system?

(Circle the one best answer.)

A. 75 N

B. 100 N

C. 25 N

D. 50 N