
Grade 5

Blackline Masters

- Body Systems Chart (BLM 5-A)
- Types of Levers (BLM 5-B)
- Gear Template (BLM 5-C)
- Weather Report Terminology (BLM 5-D)
- Weather or Climate? (BLM 5-E)
- Influences on Climate (BLM 5-F)
- Constructing a Prototype: Observation Checklist (BLM 5-G)
- Design Project Report (BLM 5-H)
- Design Project Report: Assessment (BLM 5-I)
- Conducting a Fair Test: Observation Checklist (BLM 5-J)
- Experiment Report (BLM 5-K)
- Experiment Report: Assessment (BLM 5-L)

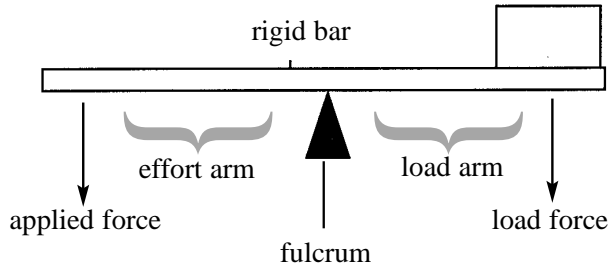
Body Systems Chart

System/Parts	Function
Digestive System Parts <ul style="list-style-type: none"> • Mouth • Esophagus • Stomach • Small Intestine • Large Intestine 	<ul style="list-style-type: none"> • • • • •
Skeletal System (Bones)	
Muscular System Parts <ul style="list-style-type: none"> • Muscles • Tendons • Ligaments 	<ul style="list-style-type: none"> • • •
Nervous System Parts <ul style="list-style-type: none"> • Brain • Spinal Cord • Nerves 	<ul style="list-style-type: none"> • • •
Integumentary System (Skin)	
Respiratory System Parts <ul style="list-style-type: none"> • Nose • Trachea • Lungs 	<ul style="list-style-type: none"> • • •
Circulatory System Parts <ul style="list-style-type: none"> • Heart • Blood Vessels/ Arteries/Capillaries • Blood 	<ul style="list-style-type: none"> • • •

Types of Levers

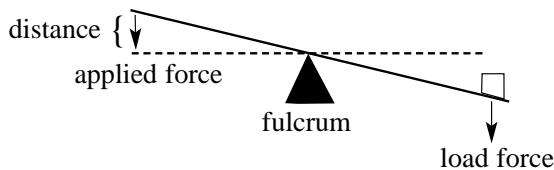
Class One Lever

In class one levers the fulcrum is situated between the load and the applied force. A teeter-totter is an example of a class one lever.



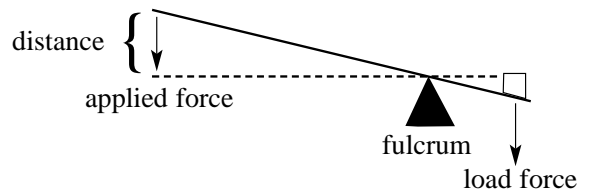
Position of Fulcrum

a.



The effort and load arms are equal in length. To achieve balance, the applied force equals load force.

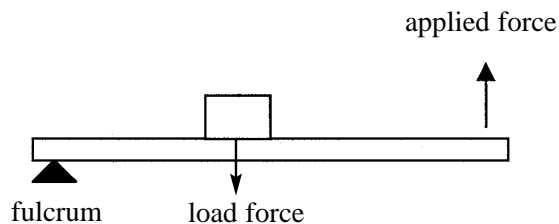
b.



The effort arm is longer than the load arm. To achieve balance, the applied force is less than the load force, but has to be applied over a longer distance.

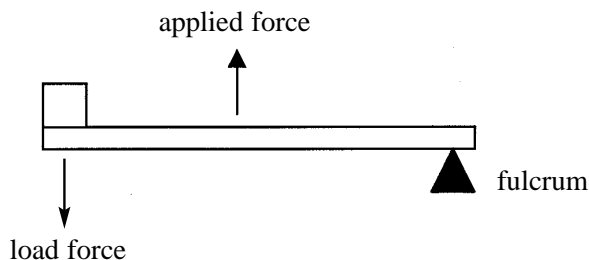
Class Two Lever

Class two levers have the fulcrum at one end of the bar, with the load acting downward between the effort force and the fulcrum and the applied force acting upward at the opposite end of the bar from the fulcrum. A wheelbarrow is an example of a class two lever.

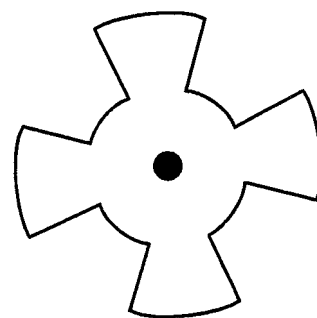
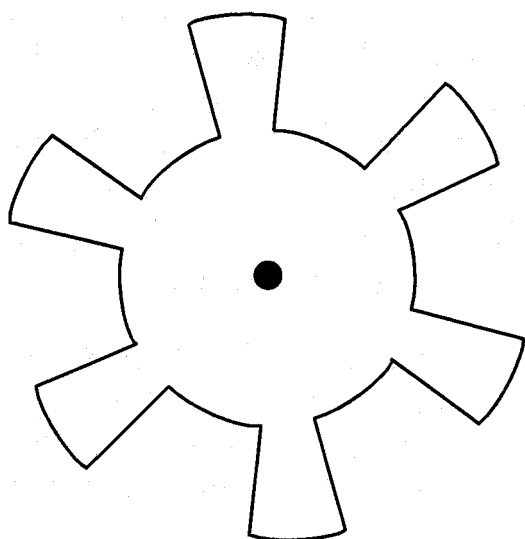
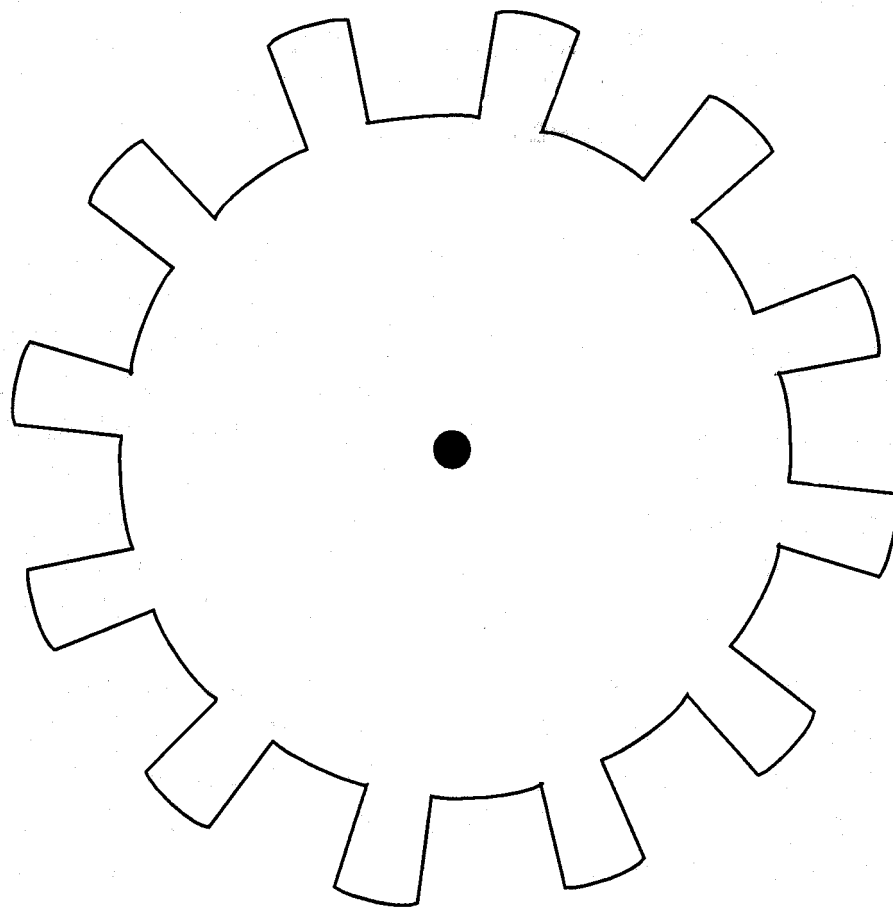


Class Three Lever

Class three levers have the fulcrum at one end and the load at the other end, with the effort force between them. A fishing rod is an example of a class three lever.



Gear Template



Weather Report Terminology

Associate the following weather report terms with the appropriate descriptions. In some cases, there may be more than one correct answer.

Terms

1. _____ temperature
2. _____ wind speed
3. _____ wind chill factor
4. _____ humidex
5. _____ UV Index
6. _____ precipitation
7. _____ relative humidity
8. _____ wind direction
9. _____ barometric pressure
10. _____ cloud cover
11. _____ front
12. _____ probability of precipitation

Descriptions

- a. indicates the extent of clouds in the sky
- b. indicates the possibility of rain or snow
- c. indicates the intensity of the Sun's ultraviolet rays
- d. the zone where two air masses meet
- e. rain, snow, and hail
- f. is dependent on the temperature and the speed of the wind
- g. is dependent on the temperature and the relative humidity
- h. indicates the amount of water present in the atmosphere
- i. is expressed in degrees Celsius
- j. is expressed in km/h
- k. can be measured with a rain/snow gauge
- l. can be measured with an anemometer
- m. can be measured with a weather vane
- n. can be measured with a thermometer
- o. the force that the mass of the atmosphere exerts on the Earth's surface

Look for:

- | | |
|------------------------|------------------------------------|
| 1. i/n temperature | 7. h relative humidity |
| 2. j/l wind speed | 8. m wind direction |
| 3. f wind chill factor | 9. o barometric pressure |
| 4. g humidex | 10. a cloud cover |
| 5. c UV Index | 11. d front |
| 6. e/k precipitation | 12. b probability of precipitation |

Weather or Climate?

Name: _____ Date: _____

Identify whether the following statements describe the weather (W) or the climate (C). Explain your answers.

1. _____ Victoria is situated on the straight of Juan de Fuca, an extension of the Pacific Ocean. The warm ocean waters keep the winters mild in Victoria.
2. _____ Flin Flon and The Pas are near the Saskatchewan border. Last Saturday, it snowed in Flin Flon but not in The Pas.
3. _____ Churchill is situated along the Hudson Bay. In the spring, the community remains cold for a long time because the ice is slow to melt.
4. _____ Banff is close to Calgary, but is at a higher elevation. Consequently, it takes longer for the snow to melt in Banff than in Calgary.
5. _____ St. Malo is situated near the Rat River. Last week it rained every day and the river overflowed.
6. _____ Vancouver is on the same latitude as St. Boniface. Since Vancouver is near the sea, it receives much more rain.
7. _____ There was so much snow in St. Laurent that the schools in the region were closed.
8. _____ The winters in Thompson are so cold that some car companies test their automobiles there.
9. _____ In July, a tornado destroyed two barns in the St. Claude region.
10. _____ Every winter there are blizzards in Manitoba. In some cases, the roads must be closed.

Look for:

- | | |
|------|-------|
| 1. C | 6. C |
| 2. W | 7. W |
| 3. C | 8. C |
| 4. C | 9. W |
| 5. W | 10. C |

Influences on Climate

Use the following data and an atlas to answer the questions below.

City	Average Temperature in January	Average Temperature in July	Latitude
Churchill	-27.5°C	11.8°C	55°N
Winnipeg	-19.3°C	19.6°C	50°N
Regina	-17.9°C	18.9°C	50°N
Halifax	-6.0°C	18.2°C	40°N

1. Which city is coldest in the winter? What is a possible explanation for this?
2. Halifax is located closer to the equator than the other cities. Why is Halifax not the warmest city in the summer?
3. Which city has the least variation between summer and winter temperatures? What is a possible explanation for this?
4. Both Winnipeg and Regina experience extreme temperatures (very hot in the summer and very cold in the winter) and a wide range between summer and winter temperatures. Which of the following cities is likely to experience a climate similar to that of Winnipeg and Regina: Medicine Hat or Nanaimo? Explain why.

Look for:

1. Churchill. It is located at the highest latitude—farthest from the equator.
2. The proximity to the ocean has a moderating effect on summer temperatures.
3. Halifax. Its proximity to the ocean has a moderating effect on both summer and winter temperatures, resulting in much less seasonal variation here than in other cities across Canada.
4. While both cities are located at a similar latitude, Medicine Hat is mid-continental and would have similar temperatures to Winnipeg and Regina. Nanaimo is on the ocean and, like Halifax, would have less variation in seasonal temperatures.

Constructing a Prototype: Observation Checklist

Date: _____ Problem/Challenge: _____

A group of students can be selected as a focus for observation on a given day, and/or one or more of the observational areas can be selected as a focus. The emphasis should be on gathering cumulative information over a period of time.

Names	Has Safe Work Habits (ensures personal safety and safety of others)	Works with Group Members to Carry Out Plan	Participates in Analysis and Modification of Prototype	Shows Evidence of Perseverance and/or Confidence	Comments
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					

(continued)

Constructing a Prototype: Observation Checklist (*continued*)

Names	Has Safe Work Habits (ensures personal safety and safety of others)	Works with Group Members to Carry Out Plan	Participates in Analysis and Modification of Prototype	Shows Evidence of Perseverance and/or Confidence	Comments
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
31.					
32.					
33.					

Notes:

Design Project Report

Name: _____

Date: _____

Problem/Design Challenge:

Criteria:

Brainstorming (What are all the different ways . . .):

Planning:

Steps to Follow:

Materials:

Safety Considerations:

(continued)

Design Project Report (continued)

Prototype Sketch 1 (Plan):

Top View

Side View

Prototype Sketch 2 (Final):

Top View

Side View

Design Project Report: Assessment

Prototype: _____ Date: _____

Team Members: _____

Criteria	Possible Points*	Self-Assessment	Teacher Assessment
Identifying the Practical Problem and Criteria for Success <ul style="list-style-type: none"> the problem is clearly stated class and/or group criteria are identified criteria address all or some of the following: function, aesthetics, environmental considerations, cost, reliability 			
Planning <ul style="list-style-type: none"> all steps are included and clearly described in a logical sequence all required materials/tools are identified safety considerations are addressed a labelled top- and side-view sketch of the prototype is included (Sketch 1) 			
Testing the Prototype <ul style="list-style-type: none"> tests are described and align with criteria (e.g., each criterion has been tested) test results are presented in an appropriate format (data sheet is attached) 			
Evaluating and Improving the Design <ul style="list-style-type: none"> a final sketch of the prototype is included (Sketch 2) changes to the original plan are justified strengths and weaknesses of the final prototype are presented suggestions for “next time” are included and/or “new problems” are identified 			
Total Points			
Comments:			

*Note: The teacher and/or the class assigns possible points to reflect the particular emphasis/es of the project.

Conducting a Fair Test: Observation Checklist

Experiment: _____ Date: _____

A group of students can be selected as a focus for observation on a given day, and/or one or more of the observational areas can be selected as a focus. The emphasis should be on gathering cumulative information over a period of time.

Names	Has Safe Work Habits (workspace, handling equipment)	Ensures Accuracy/ Reliability (e.g., repeats measurements)	Works with Group Members to Carry Out Plan	Shows Evidence of Perseverance and/or Confidence	Comments
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					

(continued)

Conducting a Fair Test: Observation Checklist (*continued*)

Names	Has Safe Work Habits (workspace, handling equipment)	Ensures Accuracy/ Reliability (e.g., repeats measurements)	Works with Group Members to Carry Out Plan	Shows Evidence of Perseverance and/or Confidence	Comments
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
31.					
32.					
33.					

Notes:

Experiment Report

Name: _____ Date: _____

Experiment: _____

Question:

Prediction/Hypothesis: (Identify a cause and effect relationship.)

Planning for a Fair Test

- **Apparatus/Materials:**

- **Variables to Hold Constant:**

- **Method:** (Include steps to follow and safety considerations.)

(continued)

Experiment Report (*continued*)

Observations:

Analysis of Data: (Identify patterns and discrepancies.)

Note: Attach graph on a separate page, if required.

(*continued*)

Experiment Report (*continued*)

Strengths and Weaknesses of Approach: (State what went well and what needs to be done differently next time.)

Conclusion: (Support or reject prediction/hypothesis; pose new question(s).)

Applications/Implications: (Link to daily life or area of study.)

Experiment Report: Assessment

Experiment Title: _____ Date: _____

Team Members: _____

Criteria	Possible Points*	Self-Assessment	Teacher Assessment
Making a Prediction/Hypothesis <ul style="list-style-type: none"> the prediction/hypothesis clearly identifies a cause and effect relationship 			
Planning for a Fair Test <ul style="list-style-type: none"> required apparatus/materials are identified major variables to hold constant are identified steps to follow are included safety considerations are addressed 			
Conducting a Fair Test/Making and Recording Observations <ul style="list-style-type: none"> detailed data are recorded; appropriate units are used data are recorded in a clear/well-structured/appropriate format 			
Interpreting and Evaluating Results <ul style="list-style-type: none"> graphs are included (where appropriate) patterns/trends/discrepancies are identified strengths and weaknesses of approach are identified 			
Drawing a Conclusion <ul style="list-style-type: none"> prediction/hypothesis is supported or rejected new question(s) are identified 			
Making Connections <ul style="list-style-type: none"> potential applications to or implications for daily life are identified and/or links to area of study are made 			
Total Points			
Comments:			

*Note: The teacher and/or the class assigns possible points to reflect the particular emphasis/es of the experiment.