

Name(s): _____

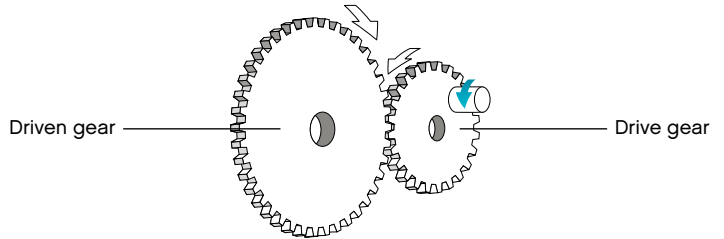
Date and subject: _____

Principle Models: Gears

Student Worksheet

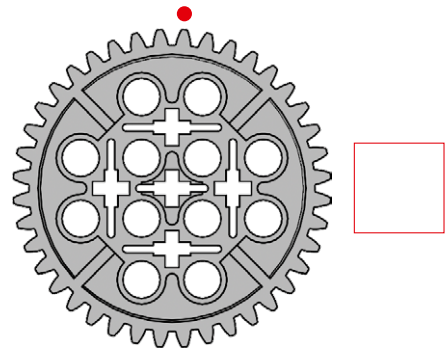
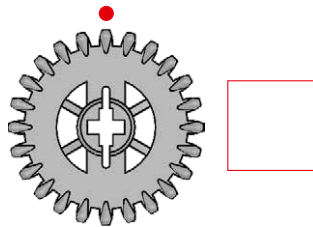
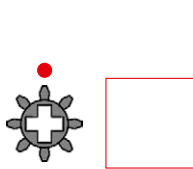
Things to talk about:

- What do you know about this simple machine?
- Where do we use this simple machine?
- Why do we use this simple machine?



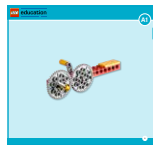
Find the LEGO® gears shown and count the number of teeth they each have. Start counting from the dot.

Write your answers in the boxes.



1. Build A1 (Direction of rotation).

Follow Building Instructions A, pages 4 to 8, steps 1 to 7.

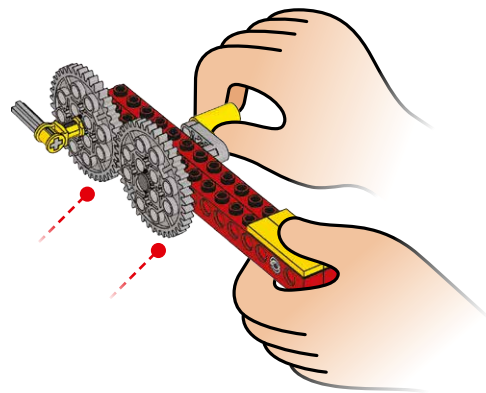


2. Label the gears.

Draw lines from the words to the picture of the model.



Driven gear ●
Drive gear ●



3. Try out the model and make observations.

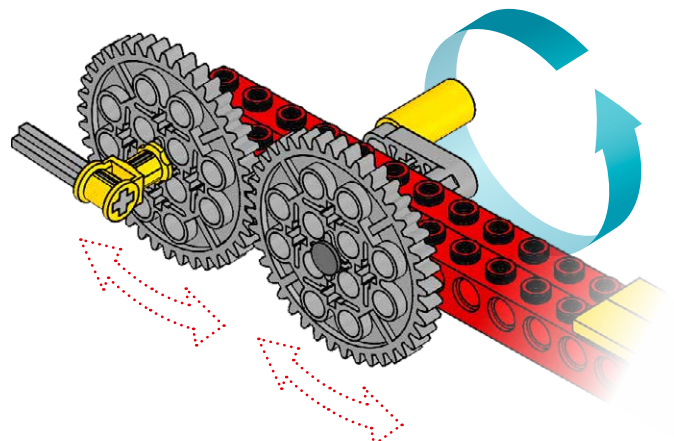
Crank the handle one full turn, and count how many times the position marker turns. Write your answer here:



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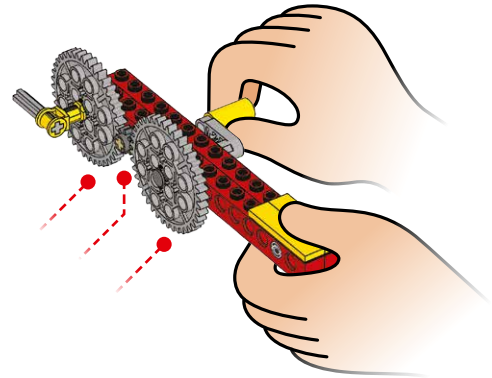
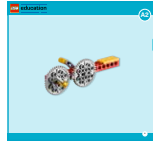


Observe which way the gears turn when you crank the handle, and draw arrows to show the directions they turn in.



1. Build A2 (Idler gearing).

Follow Building Instructions A, pages 10 to 14, steps 1 to 8.



2. Label the gears.

Draw lines from the words to the picture of the model.



- Driven gear ●
- Idler gear ●
- Drive gear ●

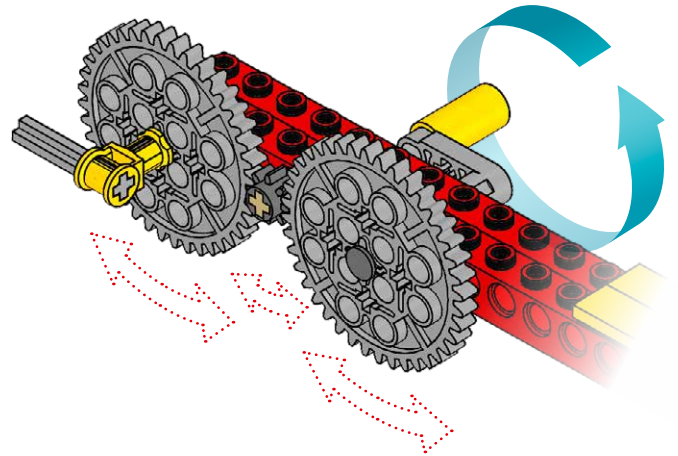
3. Try out the model and make observations.

Crank the handle one full turn, and count how many times the position marker turns. Write your answer here:



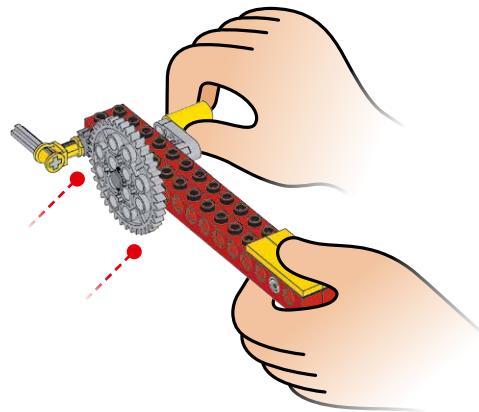
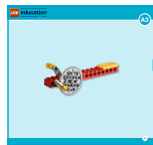
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Observe which way the gears turn when you crank the handle, and draw arrows to show the directions they turn in.



1. Build A3 (Increasing speed of rotation).

Follow Building Instructions A, pages 16 to 20, steps 1 to 7.



2. Label the gears.

Draw lines from the words to the picture of the model.



- Driven gear ●
- Drive gear ●

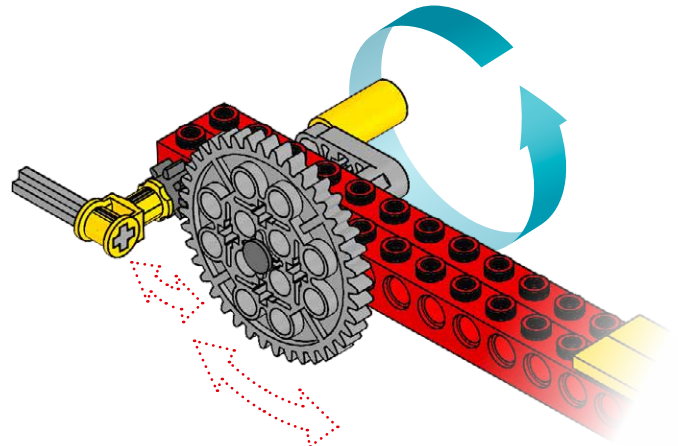
3. Try out the model and make observations.

Crank the handle one full turn, and count how many times the position marker turns. Write your answer here:

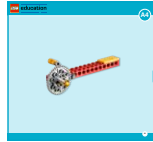


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Observe which way the gears turn when you crank the handle, and draw arrows to show the directions they turn in.



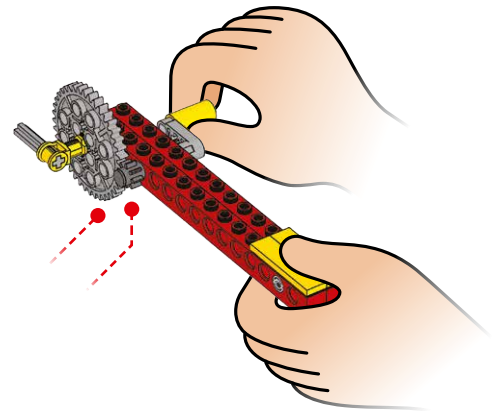
- Build A4** (Decreasing speed of rotation).
Follow Building Instructions A, pages 22 to 26, steps 1 to 7.



- Label the gears.**
Draw lines from the words to the picture of the model.



Driven gear ●
Drive gear ●

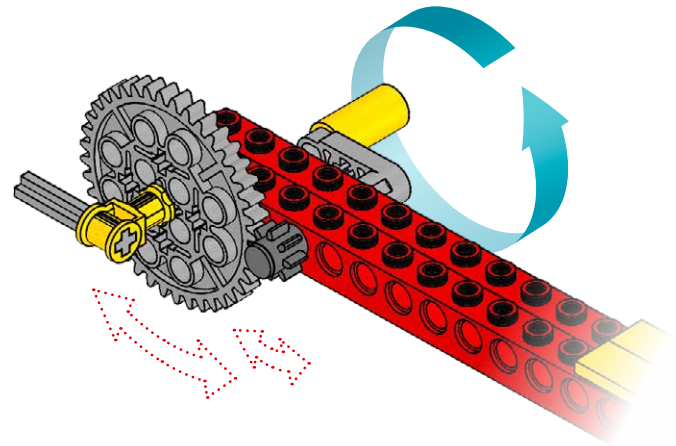


- Try out the model and make observations.**
Count how many times the handle has to turn for the position marker to turn once.
Write your answer here:



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Observe which way the gears turn when you crank the handle, and draw arrows to show the directions they turn in.



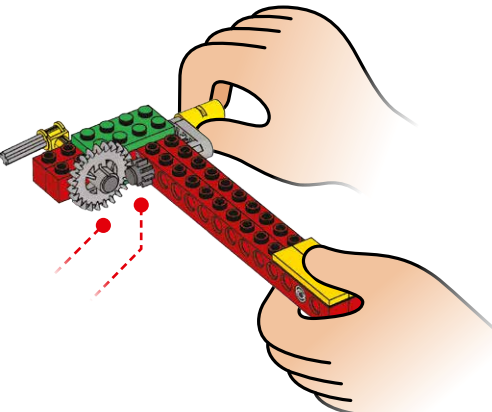
- Build A5** (At an angle).
Follow Building Instructions A, pages 28 to 32, steps 1 to 8.



- Label the gears.**
Draw lines from the words to the picture of the model.



Crown gear ●
Spur gear ●



- Try out the model and make observations.**
Count how many times the handle has to turn for the position marker to turn once.
Write your answer here:



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Observe which way the gears turn when you crank the handle, and draw arrows to show the directions they turn in.

