Scale Model Project

Objective: Students will make measurements and build a scale model. The model will demonstrate a **consistent** mathematical relationship between each of its parts.

* The model can be either enlarged or reduced from its original measurements.
* The model does not have to (but can be) made out of the original’s materials but should look the same.
* The project is due \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Bring in the **original object** and the **model you created**.
	+ Bring in a **neatly written / typed piece of paper** with your name, class period, team, homeroom**, all of the original object’s measurements and all the model’s measurements and the ratio, fraction and percentage change between the original and the model**.
	+ Bring in a **description of how it was built / made**.
* Any changes to the above criteria has to be discussed before due date with Mrs. LaRosa
* If you have questions, concerns or need help please talk to Mrs. LaRosa.

Example of “write up” is located on the back: (you can use this one if you like), just make sure **all** the measurements are measured. If there are more measurements than what is listed add them in.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Scale Model Rubric** | **Exemplary 4 points (100%)** | **Proficient 3 points (85%)** | **Developing 2 points (70%)** | **Needs Improvement 1 point (55%)** |
| **Construction** | Object looks exactly like enlargement or reduction of original, using similar materials or materials that look like the original. Parts fit together correctly. | Object looks similar to enlargement or reduction of original. Parts look like they go together but don’t fit together perfectly. | Object looks somewhat like original and parts barely fit together. | Object does not look like original and parts do not fit together. |
| Object is built to match the recorded ratio for all measurements | Object is built to match the recorded ratio for at least 85% of measurements | Object is built to match the recorded ratio for at least 50% of measurements | Object is built to match the recorded ratio for fewer than 50% of measurements |
| **Scaling (compare objects dimensions)** | Object is made scaled up or down proportionally on all parts of the object (new object to original object ratio is consistent for every measurement). | Object is made scaled up or down proportionally on most parts of the object (new object to original object ratio is consistent for at least 85 % of measurement). | Object is scaled up or down proportionally on some parts of the object (new object to original object ratio is consistent for at least 50% measurement). | Object is not scaled up or down proportionally (new object to original object ratio is not consistent for less than 50% measurements). |
| **Calculations** | All recorded measurements of created object reflect the recorded ratio. | At least 85% of measurements of created object reflect the recorded ratio. | At least 50% of measurements of created object reflect the recorded ratio. | Less than 50% of measurements of created object reflect the recorded ratio. |
| All recorded measurements of created object reflect the recorded fraction.  | At least 85% of measurements of created object reflect the recorded fraction. | At least 50% of measurements of created object reflect the recorded fraction. | Less than 50% of measurements of created object reflect the recorded fraction. |
| All recorded measurements of created object reflect the recorded percent change. | At least 85% of measurements of created object reflect the recorded percent change. | At least 50% of measurements of created object reflect the recorded percent change. | Less than 50% of measurements of created object reflect the recorded percent change. |
| **Measurements** | All measurement of original and model match what it recorded. | Most (>85%) measurement of original and model match what it recorded. | Some (>50%) measurement of original and model match what it recorded. | Few (<50%) measurement of original and model match what it recorded. |
| All measurements on object are recorded | Most (>85%) measurements on object are recorded | Some (>70%) measurements on object are recorded | Few (<50%) measurements on object are recorded |
| **Creativity / Complexity**  | The object is creative and shows the student put much though into the design.  | The object is fairly creative and show the student put thought into the design. | The object is not very creative and shows the student put a little thought into design. | The object is not creative and shows the student didn’t put thought into the design. |
| **Write up** | The Write up describes thoroughly how scale model was made. It’s written clearly and detailed so someone could repeat the process. | The Write up describes for the most part how scale model was made. It’s written clearly with a few missing details. | The write up barely describes how the scale model was made. It has missing information. | The write up does not describe how the scale model was made or is very confusing to understand. |

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Class\_\_\_\_\_\_\_\_\_\_Team\_\_\_\_\_\_HR\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Object:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Ratio:\_\_\_\_\_\_\_:\_\_\_\_\_\_\_ Fraction \_\_\_\_\_\_\_\_ Percent change: \_\_\_\_\_\_\_\_\_%**

Please record ALL measurements of the original object and model, make sure the location of measurement is clear (feel free to draw a diagram and attach if helpful)

All measurements of Original

Measurement 1: Length =\_\_\_\_\_\_\_\_\_\_\_

Measurement 2: Width = \_\_\_\_\_\_\_\_\_\_\_

Measurement 3: Height= \_\_\_\_\_\_\_\_\_\_\_

Measurement 4:

Measurement 5:

Measurement 6:

All measurements of Model

Measurement 1: Length =\_\_\_\_\_\_\_\_\_\_\_

Measurement 2: Width = \_\_\_\_\_\_\_\_\_\_\_

Measurement 3: Height= \_\_\_\_\_\_\_\_\_\_\_

Measurement 4:

Measurement 5:

Measurement 6:

Building Description:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_