

PHYSICS Project: Center of Gravity/ MASS

Let your Creativity loose! Utilize your artistic ability, craftsmanship, and other such talents to design and build a project related to **center of gravity**. **Due Date:** _____

The project will be worth ___ points, with an additional 5 points possible for Extra Credit. Grading the projects necessarily involves some subjectivity. I will try to take into account such factors as care, effort, neatness, craftsmanship, creativity, artistic merit, degree of difficulty, time spent, and how well the project relates to the topic (center of gravity).

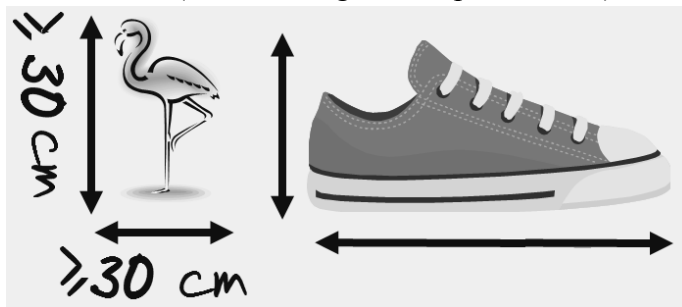
POSSIBLE ACTIVITIES:

1. **FLAT SHAPE:** Find the center of gravity of a shape created on a piece of cardboard or foam board. *It is important that the material be stiff enough to balance.* You can choose a **geographic area** (continent, country, state, county, city, etc) or a **character** or a **logo**.

Requirements for this choice:

- a. Test this by the “**plumb line**” method: Hang your flat object by a paperclip or a pin by putting a small hole near the outside rim of your shape. From this same paperclip or pin, hang a piece of string with a weight on the end of it, called a “plumb bob.” Draw a line along the string as it hangs down. Repeat this at least two more times **Use 3 clearly visible lines and clearly circle the center of gravity.**
- b. *Only one person per class can do a given area or character.* You must check with me to sign up for your chosen topic to be sure that is not taken. First person who asks gets the topic. *If you complete the same topic as someone else, you will lose points!*
- c. You may assume the shape is *geographically uniform*, i.e. flat end of uniform density. 3D shapes and added weights that are too tall will make your project much more difficult to balance.
- d. Your project must be *at least 30 cm* in each direction, (i.e. left to right and up and down)
- e. Commercial road maps or country maps or printed photos may **NOT** be cut out and pasted to a stiffer material. *You have to produce the shape and design.*

*While this is the most common choice, it is also the one that requires you to be **extra creative** in order to demonstrate your understanding and meet the creative elements!*



2. **3D sculpture:** Create a sculpture that illustrates center of gravity. *Examples:* Bird that balances on the end of your finger; tightrope walker that balances on one foot. You can use any materials you wish . . . be creative and artistic! Several examples will be shown in class. *Using pre-made or bought objects may lower your creativity points*
3. **A VIDEO, OR CREATE A POWERPOINT** related to center of gravity. Videos should be 3-5 minutes and may only be one in pairs. While fun and entertaining videos are best, **be sure that there is sufficient content to the presentation.** Someone should be able to watch your video or presentation and *completely understand* the concept.
4. **Anything else that you may come up with has to be cleared with me BEFORE proceeding.**