Curation of motions

The following guidelines have been compiled to help you in preparing your Curation. Please feel free to discuss your ideas with me regularly, and feel free to suggest alternatives. Be creative!!!

Purpose:

During this course, we will be studying how and why things move, exploring various phenomena. What may not be immediately apparent is how these scientific principles are intertwined with our daily experiences and the world around us.

This assignment is designed to bridge that gap, offering students a chance to collaborate in teams of four and embark on a creative journey. Your task is to discover and collect gifs or videos that illustrate different types of motion (refer to the provided topics and rubric for specific details). By actively seeking out these real-world examples, you will forge meaningful connections between theoretical concepts and tangible experiences.

But the learning doesn't stop there! Teams will have the opportunity to creatively showcase their findings, synthesizing their understanding and presenting it in an engaging and insightful manner. This activity not only reinforces the ideas we are studying in class but also fosters teamwork, critical thinking, and a deeper appreciation for the science that shapes our everyday lives.

Embrace the challenge, and let's uncover the physics that governs our world together!

Instructions:

Submissions: Teams will need to submit gifs three times during the course of the semester, corresponding to the three parts of the activity.

- Part 1 (1% of final grade due at 23:59 on Friday 15 September):
  - Students will create 6 (or fewer) gifs that clearly demonstrate 7 (or more) of the topics.
- Part 2 (2% of final grade due at 23:59 on Friday 27 October):
  - Students will create 9 (or fewer) gifs that clearly demonstrate 14 (or more) of the topics. Students may correct and reuse gifs from part 1.
- Part 3 (3% of final grade due at 23:59 on Friday 8 December):
  - Students will create 11 (or fewer) gifs that clearly demonstrate all 21 of the topics. Students may correct and reuse gifs from parts 1 and 2.

Showcasing: Each part of the assignment must be showcased on the class netboard, which can be found at this link: insert link

You can find some tutorials on how to use Netboard on their website or their youtube channel. We will spend some class time preparing you to work on this platform.

Content:

- Each gif must showcase a real-world demonstration of the phenomenon, captured by the team. You may *not* use gifs you found online. I want you to create your own.
- In addition, each gif must be accompanied by a clear but brief explanation of the phenomenon they are trying to showcase, as well as an explanation of why they believe the gif showcases the phenomenon.
    - Please keep your explanations concise. Don't give a 500-word explanation when 50 words will do. *Feel free to ask ChatGPT for help, but don't blindly trust it. It is not as good a student as you, but it can definitely help you.*
    - For example, if I were to describe an object in translational equilibrium, I could share a gif of a table with a book on it and give this explanation:

      Translational equilibrium occurs when the net force acting on an object is zero, resulting in an object remaining at rest or moving with a constant velocity. In this gif, the book is initially at rest, and it remains at rest. Since the velocity is unchanging, there is no acceleration, we can conclude that the book is in translational equilibrium, experiencing no net force.

    - In many cases the same demonstration could showcase multiple phenomena at the same time. For example, I could use the same gif to explain an object exerting an upward normal force.

      A normal force is a perpendicular force exerted by a surface on an object in contact with it. In this gif, the table's surface exerts an upward normal force on the book. Without the normal force from the table acting upwards on the book, the force of gravity would cause the book to accelerate downwards.

Time commitment:

Your curation will count for 1%+2%+3%=6% of your final grade, and as such each team member is expected to spend roughly five hours (total) actively working on this assignment. These hours will be done outside of regular class time, therefore requiring teams to find an effective way of collaborating outside of class. Although the assignment is collaborative, different individuals will need to spend some time working individually.

Group Work:

With each submission, the group must include a detailed description of each group members contribution to that part, as well as any bibliographic material.

Remember, everyone is responsible for the group. Please take a moment to read other's work before the due date.

Topics:

Here are the phenomena which must be showcased.

1. An object in translational equilibrium.
2. An object exerting an upward normal force.
3. A demonstration of conservation of mechanical energy.
4. An object at rest but not in static equilibrium.
5. An object on which a normal force acts horizontally, while friction acts vertically.
6. A moment during the motion when the velocity and acceleration vectors are perpendicular to each other.
7. A (nearly) elastic collision.
8. An object undergoing (nearly) uniform angular acceleration.
9. A projectile where drag is not significant.
10. A transformation of energy.
11. An object in dynamic equilibrium.
12. A demonstration of conservation of linear momentum.
13. A moment during the motion when the velocity and acceleration vectors point in the same direction.
14. An object experiencing both static and kinetic friction simultaneously.
15. Static friction causing an object to accelerate but not change speed.
16. A demonstration of conservation of angular momentum.
17. An object undergoing (nearly) uniform circular motion.
18. Motion where the drag force is significant.
19. A moment during the motion when the velocity and acceleration vectors point in opposite directions.
20. A (nearly) completely inelastic collision.
21. An object in static equilibrium.

Grading:

Each part will be graded on the following rubric.

Criteria ($max\ 10\ points$)	**Perfect**
Technical details ($7\ points$) *Although ChatGPT might be useful in helping you write your explanations, please don't trust it completely. It will make mistakes. Make sure you make corrections and submit your own work.*	The gif showcases each phenomenon, clearly showing: • A gif correctly showcasing the phenomena. • A clear but brief explanation of the phenomenon. • An explanation of why the gif showcases the phenomenon. *Remember to keep your explanations concise, and make sure they are written in your own words, using appropriate scientific vocabulary, without major grammatical errors.*
Quality and appearance of netboard and gifs ($1\ point$) *I'm not looking for a professional production, but I don't want gifs in dark rooms, or with long pauses.* *Similarly, your netboard should be easy to navigate.*	• The gifs are clear, and visually appealing. • The netboard is neat, and it is easy to find different elements.
Group work ($2\ points$) *Different members of the group can receive different grades.*	• Group members showed that they were able to share tasks while actively collaborating with the group. • Group members showed that they had learned new skills from the process • Members all felt that everyone contributed to the assignment.
Bonus ($max\ 2\ points$) *These bonus marks will allow a student to achieve a maximum grade of 100%.*	• These extra marks are not given easily, nor do I have something specific I am looking for to earn these marks. Be creative, and you **might** be rewarded. • To earn these bonus marks requires students to do something beyond the scope of the assignment while still being relevant.