



Srini Science Mind
Abdul Kalam Physical Science Group



NEW

9th class

PHYSICAL SCIENCE

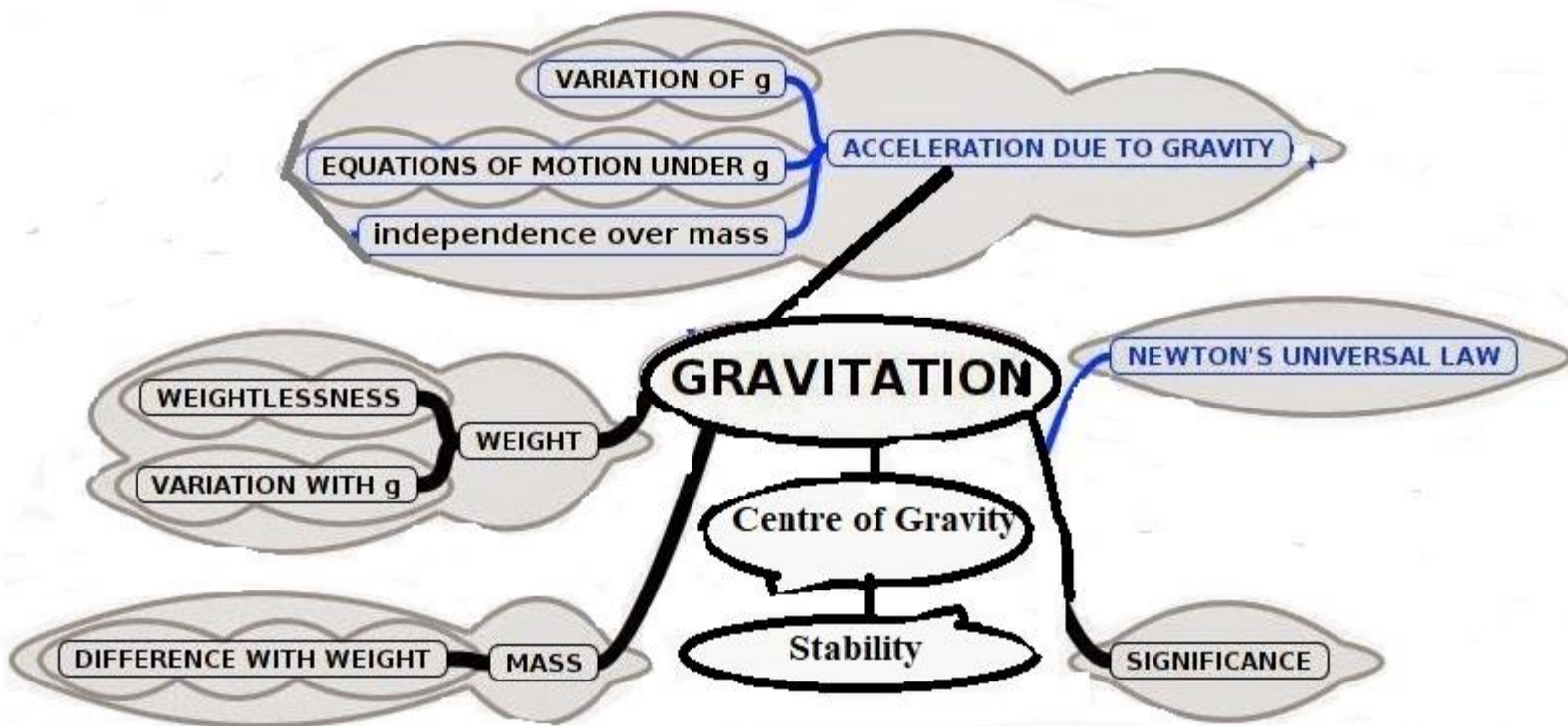
MODEL LESSON PLAN



M.SRINIVASA RAO, SA(PS) AGKMHS GUDIVADA PH: 9848143855

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students will learn how acceleration due to gravity affects the motion of objects in everyday life.
2. Students will learn about the forces acting between the planets, the sun and planets in the solar system.
3. Students assess the stability of objects by finding the center of gravity of objects used in everyday life.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
<ol style="list-style-type: none"> 1. Discussion and demonstrate activity on uniform circular motion. 2. Explain and draw velocity vectors for a body in a uniform circular motion. 3. Explain the concepts of centripetal acceleration and centripetal force. 	<ol style="list-style-type: none"> 1. Students observe the entire activity. 2. "In uniform circular motion, speed is constant but velocity is changes" - Discuss 3. Students derive the formula of centripetal acceleration. 	<ol style="list-style-type: none"> 1. Students write the definition of uniform motion. 2. Students draw velocity vectors at different points. 3. Students give a reason, why centripetal force acting 	<ol style="list-style-type: none"> 1. Which physical quantity is constant in uniform motion? 2. Why uniform circular motion is called accelerated motion? 3. What factors affect the centripetal force?

<p>4. Explain and derivation of the universal law of gravitation.</p> <p>5. Explain problems and solutions to Newton's gravitational law.</p> <p>6. Explain and conduct an activity on acceleration is independent of masses with help of small paper and book.</p> <p>7. Explain the direction of g, when freely falling bodies and vertically projected bodies.</p> <p>8. Explain the problems and solutions on freely falling and vertically projected bodies.</p> <p>9. Explain the concept of Weight and conduct an activity to measure the weight of free-fall body.</p> <p>10. Discussion and explain center of gravity with activities.</p> <p>11. Explain and conduct activity on find the center of gravity of regular shaped bodies (Meter scale, Square, Rectangle, Circle and Triangle)</p> <p>12. Explain and conduct activity on find the center of gravity of irregular shaped bodies (India map)</p> <p>13. Explain the location of the center of gravity is important for stability with suitable activities.</p>	<p>4. Students collect information on the universal law of gravitation.</p> <p>5. Students solved the problems on Newton's gravitational law.</p> <p>6."Acceleration due to gravity changes due to change in distances of objects from the center of the earth" –Group discussion</p> <p>7. Students write the equations of motion for freely falling bodies.</p> <p>8. Students solved the problems on acceleration due to gravity.</p> <p>9. Students conduct this activity and record the observations.</p> <p>10. Can an object have more than one center of gravity? – Group discussion.</p> <p>11. Students determine the center of gravity of given regular-shaped body.</p> <p>12. Students explain the finding of the center of gravity of the irregular-shaped body.</p> <p>13. Students collect information on the relation between the center of gravity and stability.</p>	<p>4. Students write the Universal law of gravitation.</p> <p>5. Students complete the homework.</p> <p>6. Students write the values of G, R and g values.</p> <p>7. Students write the equations of motion for vertically projected bodies.</p> <p>8. Students complete the homework.</p> <p>9. Why does the weight of a body will be zero during free fall? Give reason</p> <p>10. Students write the definition of the center of gravity.</p> <p>11. Students estimated the center of gravity of a given object.</p> <p>12. Students complete the homework.</p> <p>13. Why is a low center of gravity more stable?</p>	<p>4. What is the value of G?</p> <p>5. Why is G called a universal constant?</p> <p>6. $g = GM/R^2$, Explain terms in it.</p> <p>7. Give an example for the speed of the object is zero, but g is not zero.</p> <p>8. What is the S.I unit of g?</p> <p>9. Why do two bodies of different masses fall at the same rate?</p> <p>10. Does the center of gravity depend on size?</p> <p>11. Where does the center of gravity of a ring lie?</p> <p>12. Which method would be most helpful in locating the center of gravity of an object?</p> <p>13. How does the center of gravity affect stability?</p>
---	---	---	--

Check For Understanding Questions	TLM's (Digital + Print)
<p>1. Factual:</p> <ol style="list-style-type: none"> 1. Which country has the highest gravity on Earth? 2. Why is the weight of an object on the moon $1/6^{\text{th}}$ its weight on the earth? 3. Does the center of gravity of a body exist outside the body? <p>2. Open Ended/Critical Thinking:</p> <ol style="list-style-type: none"> 1. What would have happened if the Earth did not rotate? 2. Why does the weight of an object depend on its location? 3. Why is the acceleration due to gravity not constant? <p>3. Student Practice Questions & Activities:</p> <ol style="list-style-type: none"> 1. A ball is projected vertically up with a speed of 50 m/s. Find the maximum height, the time to reach the maximum height, and the speed at the maximum height ($g=10 \text{ m/s}^2$) 2. Explain some situations where the center of gravity of man lies outside the body. 3. How can you find the center of gravity of a India map made of steel? Explain. 4. Explain why a long pole is more beneficial to the tight rope walker if the pole has slight bending. 	<ol style="list-style-type: none"> 1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, DIKSHA App 4. YouTube video links
<p>Assessment:</p> <ol style="list-style-type: none"> 1. State the universal law of gravitation and explain it. 2. A stone is thrown vertically up from the tower of height 25 m with a speed of 20 m/s. What time does it take to reach the ground? ($g = 10 \text{ m/s}^2$) 3. Draw the center of gravity of the following uniform objects. a) Equilateral triangle b) Square c) Circle 4. When does an object get stability? 	

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS