

ADDITIONAL MATERIAL 2

THEMES FOR SCRATCH ANIMATIONS

1. How can you cross with the boat from one river's bank to the other?
Here the student can make an animation using different velocities for the boat and the water and also different angles between the boat velocity and the river's bank. Physics: vector sum of velocities.
2. Free fall problem: What is the distance travelled in every second by Newton's apple, in a free fall?
3. Water droplet falling down – a movement with friction, variable acceleration at the beginning and then constant velocity movement
4. The maximum height reached by an object if it is throwing in a vertical movement with different initial velocities
5. Oblique throwing of a ball with different velocities and different angles – the ball's trajectory in basketball
6. The dependence of the maximum horizontal distance travelled by a ball which is throwing with different velocities and under different angles
7. The pulley and the acceleration of two objects with different masses
8. Hooke's law and the springs
9. Elastic collision
10. Inelastic collision
11. Circular movement of planets around the Sun
12. Reflection law and the mirrors
13. Refraction law
14. Total internal reflection in prisms
15. Laws of lenses