**Plan of lesson**

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| **School:**  Aktobe regional specialized physico-mathematical boarding school  **The chapter of a long-time plan:**  **Teacher:** Tilep Aizhan  **Class:** 8 | | | |
| **Theme of lesson** | | 10.2.1.5 - Kinematics of curvilinear motion | |
| **Educational aim:** | | 10.2.1.5 – Determination of the curvature radius of the trajectory in the curvature of the curvature, tangential body traversing and full acceleration | |
| **Aim of lesson:** | | By the end of the lesson  **All students will be able** to know about main concepts of kinematics: *angular velocity, linear velocity.*  **Most of them** **will be able** to use the formula of *circular motion* and solve the problems.  **Some students will be able** to define and give examples of *circular motion*. | |
| **Evaluation criteria:** | | To know the physical meaning of movement along circles, to solve problems.   * learn the unit of measure and the angular velocity of angular and linear velocity; * Uses the formula freely in the report. * Freezes the formula, converts to SI of units; * Provides examples of life use; * - Knows the difference and importance of the angular and linear velocity. | |
| **Descriptors :** | | 1. Know the definition of linear velocity, marking, formula, unit of measure. 2. Definition, marking, formula, measurement units of angular velocity. 3. Correctly explains the terms of the report; 4. Give examples from life. | |
| **Lingual aims:** | | By the end of the lesson, students will be able to:   * Define the meaning and use the subject-specific following words: *angular velocity, linear velocity, radius-vector, tangential acceleration, angular acceleration, centripetal acceleration.* * Define the meaning and use the following words: *attract, direct, compare.* | |
| **Values:** | | Public national unity.  Unity of language. | |
| **Interdisciplinary connection:** | | Mathematics, geography. | |
| **Previous knowledge:** | | Relativity of motion | |
| **The course of the lesson:** | | | |
| **Planned stages of the lesson:** | **Planned activities on the lesson** | | **Resources** |
| **Beginning of the lesson:** | **І.**  **Organizational period.**  Greetings with students, inventory.  **ІІ.** Warm-up. Coded word: 3. 9. 18. 3. 21. 12. 1 18 – CIRCULAR | | Alphabet of English language |
| **In the middle of the lesson:** | In physics, circular motion is a movement of an object along the circumference of a circle or rotation along a circular path. It can be uniform, with constant angular rate of rotation and constant speed, or non-uniform with a changing rate of rotation.  The rotation around a fixed axis of a three-dimensional body involves circular motion of its parts. The equations of motion describe the movement of the center of mass of a body.  Examples of circular motion include: an artificial satellite orbiting the Earth at a constant height, a fan's blades rotating around a hub, a stone which is tied to a rope and is being swung in circles, a car turning through a curve in a race track, an electron moving perpendicular to a uniform magnetic field. For motion in a circle of [radius](https://en.wikipedia.org/wiki/Radius) *r*, the circumference of the circle is *C* = 2π*r*. If the period for one rotation is *T*, the angular rate of rotation, also known as [angular velocity](https://en.wikipedia.org/wiki/Angular_velocity) ω.   |  |  | | --- | --- | | Rectilinear motion | Circular motion | | x – coordinate | – angular acceleration | | – linear velocity | – angular velocity | | s = R | | | = R | | | x = x0 + t | = + t | |  |  | | - tangential acceleration | – angular acceleration | | = R – | | | *= 0 + at* | *t* | | x = x0 + 0t + | = 0 + 0t + | | s = | = | | N = | | | = , if a = const | = , if ε = const | | | Physics book, handout cards |
|  | *Reading task 1. Focus on subject-specific language*  a) Underline unknown words.  b) Compare the words with your partner  c) Guess the meaning of words  *Writing task. Focus on content knowledge*  What is the definition of circular motion?  *Reading task 2.* Gapped sentences   1. The equations of motion describe the movement of the center of \_\_\_\_ of a body. 2. For motion in a circle of [radius](https://en.wikipedia.org/wiki/Radius) *r*, the circumference of the circle is *\_\_\_\_\_\_.* 3. Since the object's velocity vector is constantly changing \_\_\_\_\_\_\_, the moving \_\_\_\_\_\_\_ is undergoing acceleration by a \_\_\_\_\_\_\_\_ force in the direction of the center of rotation.   **FA:**3appallings  **D:\Desktop\Screenshot_2017-07-12-16-45-35.pngPeak of "Joule-Watt"**  **Peak of "Joule-Watt"**  (Questions to the tops  of the hill are hidden,  Schoolchildren go out  to the peak of "Joule-  Watt" by solving it)  **FA:** Assessment through the "Head Finger" method. | | Handout cards  Joule-Watt model of the "peak"  handout paper  **C:\Users\User\Desktop\ce95ca24f4ae7c273accdbb6dcb1a2822668509c_original.png**http://s54.radikal.ru/i146/1009/3a/9dbbbece2c23.png**C:\Users\User\Desktop\ce95ca24f4ae7c273accdbb6dcb1a2822668509c_original.png** |
| **Сабақтың соңы:** | Applying knowledge: Crossword without questions.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  | a |  |  |  | |  |  |  | a | n |  |  |  | |  | c |  | c | g |  | t |  | | ***C*** | ***I*** | ***R*** | ***C*** | ***U*** | ***L*** | ***A*** | ***R*** | | e | r | o | e | l | i | n | a | | n | c | t | l | a | n | g | d | | t | l | a | e | r | e | e | i | | r | e | t | r |  | a | n | u | | i |  | i | a |  | r | t | s | | p |  | o | t |  |  | i |  | | e |  | n | i |  |  | a |  | | t |  |  | o |  |  | l |  | | a |  |  | n |  |  |  |  | | l |  |  |  |  |  |  |  | | |  |
|  | **Feedback:**   |  |  |  | | --- | --- | --- | | **Knew** | **Know** | **Want to know** | |  |  |  | | | **C:\Users\User\Desktop\ce95ca24f4ae7c273accdbb6dcb1a2822668509c_original.png**http://s54.radikal.ru/i146/1009/3a/9dbbbece2c23.png**C:\Users\User\Desktop\ce95ca24f4ae7c273accdbb6dcb1a2822668509c_original.png** |
|  | **REFLECTION:**  **http://www.stihi.ru/pics/2009/09/13/5830.jpghttp://janowcity.com/templates/Default/images/weather.pngExcellent Good Bad**  **http://sntsun.ru/images/sun_200x200.png** | |  |
| **What tasks do you plan for talented, capable pupils?** | **Assessment -** How do you check the knowledge of the learners? | | Interdisci-plinary communication, keeping safety rules in the classroom |
| **All students:**  Writes the necessary information and formulas on the subject.  Planned differentia-tion tasks by knowing, understanding, applying, analyzing. | **Partner Evaluation:**  1. Self-assessment.  2. Applause. (praise, support).  3. Evaluation through the framework of equilibrium.  4. The thumb tips have been considered effective. | | Applies knowledge of mathema-tics. The pupil was encouraged to keep the body healthy so as to maintain health. |