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для одарённых детей

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**Science lesson plan (Physics)**

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| **Content:**  Heat transfer: some materials and their properties. | | **School: Regional Boarding school-lyceum for gifted children LORD** | |
| **Date:** | | **Teacher name: Zaichenko Y.A. Sukhinina A. V.** | |
| **CLASS: 8** | | **Number present:** | **absent:** |
| **Learning objectives(s) that this lesson is contributing to** | 1. understand that physical materials have different properties of heat transfer  2. develop learner’s abilities to group materials and to predict, observe and record findings of an experiment  3. raise learners’ awareness of heat transfer. | | |
| **Lesson objectives** | **All learners will be able to:** learn names of 8 materials and their propertiesproperties  That some materials are good conductors and some are poor conductors  ppppppppppproperties  That some materials are good conductors and some are poor conductors  properties  That some materials are good conductors and some are poor conductors  properties  That some materials are good conductors and some are poor conductors | | |
| properties  be aware that some materials are good conductors and some are poor conductors | | |
| **Most learners will be able to:** | | |
| Classify heat transfer according to its types | | |
| **Some learners will be able to:** distinguish heat transfer according to the properties | | |
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| **Assessment criteria** | **Can the learners…**  Identify and name properties of a range of materials?  Sort materials into different types of heat transfer?  Make predictions?  Distinguish states of matters (solid, liquid, gas) | | |
| |  |  | | --- | --- | | **Communication**  **Vocabulary**  **Familiar:** solid, liquid, gas, states, matter.  **New:** heat transfer, good/poor conductor, conduction, convection, radiation, insulator, collision  **Structures:**  (I think) It is…, (I think ) they are…, It is possible, it is impossible…  Functions:  Describing materials  “will” prediction | **Examples of communication**  Pointing to and naming materials  Matching definitions  Sharing ideas about heat transfers, than reporting classifications about states properties  It is a good conductor/poor conductor, They are called | | **Cognition**  Identifying objects and properties of objects  Comparing different states of matter  Predicting and reasoning | **Examples of cognition**  Sorting materials into three groups  Classifying  Guessing what object is a good/poor conductor and justify why | | **Citizenship**  Be aware of what materials are better to use for different purposes | **Examples of citizenship**  To say what colors of objects are relevant to use according to their properties | | **Resources**  2 balloons, Power Point presentation, worksheets +differentiated worksheets, vocabulary table, KWL table. | |   **Plan** | | | |

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|  | **Planned timings** | | **Planned activities** | **Resources** | **Teacher  Notes** |  |
|  | Creation of collaborative environment  Lead-in | | Teacher gives students cards with some pictures of different physics materials (water, matches, coins, balloon) Students have to choose any picture they like and compare their mood with these pictures.  **To activate prior knowledge of materials teacher uses an experiment**  T: What do you think, what will we talk about today? To answer this question, I will conduct an experiment.  Опыт. С шариками на русском. Для опыта понадобятся: два воздушных шарика, свеча или спиртовая горелка, спички.  1. Наливаем в один шарик немного воды и надуваем его. 2. Второй воздушный шарик надуваем без добавления воды. 3. Зажигаем спиртовую горелку или свечу. 4. Помещаем шарик с водой над горелкой. 5. Помещаем шарик без воды над горелкой.  Итог: если надутый воздушный шарик поднести к открытому огню - он лопнет. А если в шарик налить немного воды и поместить над открытым огнем, то вода будет забирать тепло и шарик останется целым.  **What happens?**  (Отвечают на русском).  T: **How do we call this phenomenon?**  Ss: Теплопередача. | два воздушных шарика, свеча или спиртовая горелка, спички. | 5 min |  |
|  | Pre-teaching vocabulary      Reading for gist      Reading for details | | **T**: Сегодня мы будем говорить о видах теплопередачи. Now let us write a topic. I’ll say the letters and you will write them ( ученик пишет слово по буквам на англ.яз под диктовку).( h, e , a, t and the second word t, r, a, n, s, f, e, r)  So, we got the word heat transfer. We will repeat all together heat transfer. (слайд №1)  **T:**  What do we know about heat transfer?  **Таблица на доске (I know/ I want to know/ I’ve learnt)**  **Ss:** Отвечает, что знает про теплопередачу  **T:** What don’t you do not know? (отвечают). Now we will learn this. | PPT slide | **5 min** Таблица на доске (I know/ I want to know/ I’ve learnt) |  |
|  | **To predict the content of a text**  Teacher directs Ss’ attention to the pictures and elicit what they demonstrate and what the text will be about.  SS read the text andname the types of heat transfer  **Ss:** conduction, convection, radiation .  Drilling- conduction , convection, and radiation. | **Class CD**  **Vienne Diagram** | **3 min** |  |
|  | **SS read the text once more and answer the next questions in pairs:**   1. How do particles give their energy? ( Как частицы передают свою энергию?)   **Ss :** They give their energy from hotter particles to colder particles in solids. (Слайд 3)   1. **(у доски предметы):** Name good conductors of heat (Назовите хорошие проводники тепла) (слайд). for example, it is a good conductor of heat( я показываю) ( слайд 3)   Ученик называет у доски.   1. **Name** poor conductors of heat (Назовите плохие проводники тепла   ( слайд 3)   1. In what state is convection possible?   **Ss :** convection is possible only in a liquid or gas   1. Is convection possible in a solid state?   **Ss:** No, it is impossible   1. Is it better to wear dark or light clothes in the summer?   (какую одежду лучше использовать летом темную или светлую.)  **Ss:** answer   1. Why?   **Ss:** It is better to wear light closes because white and shiny objects reflect radiation | PPT slide  **Pair-work** | **10 min** |  |
|  | **Follow-up activities:** | | **a) Задание на соответствие ( слайд №4)**  **T :** Look at the whiteboard , name the type of heat transfer. For example, what type of heat transfer is it? It is radiation Например это излучение  **Ss:** answer   1. **Individually: filling the words into the definitions**   **T:** You have to work individuallyand fill the words into the gaps  \_\_\_\_is when heat flows by the collision of \_\_\_particles to colder particles in \_\_\_\_   1. most metals( iron, copper, aluminum, silver) are \_\_\_\_\_\_\_ 2. wood, glass, paper, air and plastic are \_\_\_\_\_\_\_\_\_\_. They are called \_\_\_\_\_\_\_\_\_\_\_\_ 3. convection always reguires a medium \_\_\_\_\_\_\_\_\_ 4. **peer-assessment:** Now. Check your answers with you partner. 5. **Ok. Let’s check you works.( Проверяем)**   **Time is up. Let’s check your works.** | **Worksheets – SS have to fill the words into the gaps** |  |  |
| F | Feedback | | **Final plenary:** TPR- now let's play. Встаньте, пожалуйста. Игра заключается в следующем, я называю слово на английском языке, вы его передаете, и последний человек должен правильно его записать  ( convection. Radiation).  b) Teacher gives feedback to the learners: На данном этапе, я думаю, мы можем вернуться к нашей таблице и сказать, что я знаю. ( Перечисляют , что знают) I know what is good conductors of heat и т.д. | **PPT – SS have to complete the KWL-table** |  |  |
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| **Reflection**  Were the lesson objectives/learning objectives realistic?  Did I stick to timings?  What changes did I make from my plan and why? | **Answer the most relevant questions from the box on the left about your lesson.**  **Summary evaluation**  What two things went really well (consider both teaching and learning)?  1:  2:  What two things would have improved the lesson (consider both teaching and learning)?  1:  2:  What have I learned from the lesson about this class or individuals that will inform my next lesson? |