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Create a lesson plan for grade 7 children on the Properties of materials. Include an introduction, lesson outline, questioning, assessment, differentiation and plenary. Include links to some video and worksheet resources.

Introduction:

Material properties are the physical characteristics of a material, such as its hardness, strength, flexibility and reactivity. In this lesson, we will explore different properties of materials and find out how they can help us understand how things work.

Lesson Outline:

1. Show a video clip that describes the properties of materials.
 - Video Clip: <https://www.youtube.com/watch?v=RPf1gIv39eo>
2. Discuss the 3 types of materials (metals, polymers, ceramics) and their corresponding properties.
3. Introduce experimental activities to explore the properties of materials.
 - Worksheet and activities: <https://www.teachwithmovies.org/guides/materials-properties.html>
 - Online interactive activities: <https://online.visual-literacy.org/courses/properties-of-materials>
4. Ask the children to explore and identify the properties of different materials.
5. Discuss the properties of materials found in everyday objects and explain how these properties help them perform their job.

Questioning:

Throughout the lesson, questions can be asked to encourage the students to think further. Examples include:

- What is the difference between a metal and a ceramic?
- How do the properties of a material affect its function?
- What type of material is best suited for a particular product?

Assessment:

The students will be assessed based on their understanding of the different material properties and ability to apply the knowledge when researching everyday objects.

Differentiation:

This lesson can be easily adapted to different ability levels by using different materials, worksheets and videos. For students who are more advanced, they can be encouraged to research more complex properties, such as electrical and thermal conductivity. For students who need more support, provide them with an online interactive resource to help them better visualise the topic.

Plenary:

At the end of the lesson, recap the lesson objectives and give the students a chance to practice the strategies they have learnt. The students should be able to:

- Explain the different properties of materials
- Identify the different types of materials and their properties
- Use the properties of materials to explain how everyday objects work.