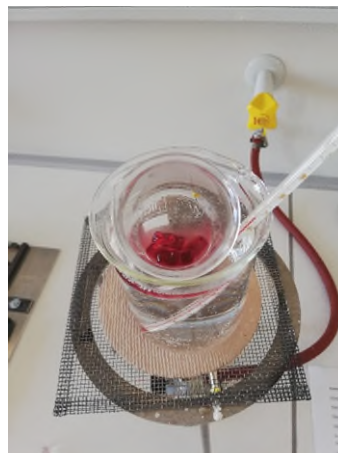
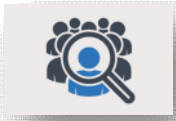


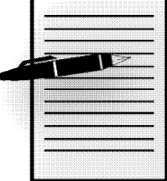


Summary

The rebels need you!

Develop sustainable adhesives and save the world.



	Target age	
	Age 14 - 15	
	Level of difficulty	
	<input type="checkbox"/> Easy <input checked="" type="checkbox"/> Medium <input type="checkbox"/> High	
	Key words: sustainability, resource efficiency, adhesives	
	Abstract of the activity: <i>This toolkit is based on a science fiction story to motivate students to explore the world of adhesives. The scenario is as follows: In a post-apocalyptic world, surviving rebel camps can only use 'traditional' postal packages to communicate. As resources are scarce, the rebels only have natural materials available to make glue to seal parcels.</i> <i>The actual task for the students is to make and test glue themselves from natural materials that are within their reach. They have to select the adhesive that glues a package made of cardboard best and in a way that is resistant to certain requirements like heat, cold and moisture. To do this, the pupils must be familiarised with the basic principles of the chemistry and physics of adhesives.</i>	

Summary

	<p>Learning Goals (<i>max 250 characters</i>)</p> <ul style="list-style-type: none"> • Understand the basic chemical and physical principles of adhesive bonding • Understand and apply testing methods for bonded joints as an example of material testing • Develop an awareness of the need for sustainable and resource-efficient use of materials
	<p>Specific Abilities - <i>At the end of the activity the student will be able to:</i></p> <ul style="list-style-type: none"> • Describe the basic chemical and physical principles of adhesive bonding • Explain and apply testing methods for bonded joints as an example of material testing • Explain the reasons for sustainable and resource-efficient use of materials
	<p>Cross-curricula Links-</p> <ul style="list-style-type: none"> • Ecology/Environment • Chemistry • Physics • Technology • Politics
	<p>Prerequisites - <i>Knowledge and skills necessary for carrying out the activity</i></p> <ul style="list-style-type: none"> • craft skills developed in accordance with target age
	<p>Time requirement</p> <ul style="list-style-type: none"> • 4 to 16 school hours depending on whether a testing machine is to be built by the students and how the work is divided up.

Summary

Learning and Teaching Support Materials - What you can find in the toolkit



1. Science Fiction Story
2. Theory of adhesive bonding – physical and chemical background
3. Lab descriptions (included in the story board)
4. Short questionnaires (before and after working with the toolkit)
5. Additional material and links for the teacher

RM
Ambassadors

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