





Summary

Raw materials and sustainability:

What can composite materials contribute?



	Target age	
	Age 16 - 19	
	Level of difficulty	
	<input type="checkbox"/> Easy <input checked="" type="checkbox"/> Medium <input type="checkbox"/> High	
	Key words:	
	sustainability, resource efficiency, composites, project management	
	Abstract of the activity:	
	<p>This material on the topic "Raw Materials and Sustainability - what can composites contribute?" has been created in such a way that it can be used in different settings. On the one hand, it is intended to enable teachers to create teaching units on the topics of (raw) materials, substitution of materials, fiber composites and sustainability with extracurricular teaching material.</p>	
	<p>Furthermore, these materials offer an ideal starting point to introduce the basics of project management: Among the materials is a project assignment on the subject of fiber composite materials and sustainability that can be worked on by teams of students. With provided material on the topic of project management (explanatory videos and film sets), the philosophy of project management can be introduced and applied to a real project assignment using a concrete example.</p>	
	<p>Here again two application scenarios are offered: The project can be worked on either in (presence) school lessons or in times of homeschooling in a rather virtual environment. The included test descriptions for the production of</p>	

Summary

"kitchen" fiber composite materials that are harmless to health and occupational safety enable students to conduct experiments outside (school) laboratories.

An extensive handbook for teachers on the topic of introducing project management in schools completes the offer.



Learning Goals *(max 250 characters)*

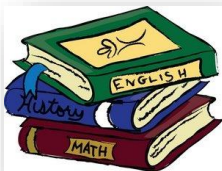
- Understand the potentials and ecological challenges of composite materials
- Understand manufacturing processes and testing methods of composites
- Understand and apply sustainable substitutions for critical elements in composites
- Understand and apply basic skills in project management



Specific Abilities - *At the end of the activity the student will be able to:*

- Describe the basic chemical and physical principles that explains the material performance of composites
- Explain the reasons for sustainable and resource-efficient use of materials in general and of composites in particular
- Plan and organize a project (define project targets, work packages and work in a team)

Cross-curricula Links-



- Ecology/Environment
- Economics/Economy
- Chemistry: Polymer chemistry
- Physics: Mechanics
- Technology: Manufacturing techniques



Prerequisites - *Knowledge and skills necessary for carrying out the activity*

- craft skills developed in accordance with target age



Time requirement

- the whole learning pathway (including the project) is conceived for a half year program

Summary

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



1. videos and slides (theoretical input on composites)
2. practical lessons
3. self-assessments for students
4. project management handbook for teachers
5. slides and explanatory videos on project management
6. project task

RM Ambassadors

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