GREEN-EDU Unità di apprendimento

Titolo: Ispirati dalla natura. Biomimetica.

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Riassunto

Lesson Plan	
Soggetto	Biotecnologia verde
Argomento	
Età degli studenti	*10 anni*
Tempi di preparazione	*40-60 minuti*
Tempi di insegnamento	*60minuti*
Materiale didattico online (link per materiale online)	*https://sway.office.com/Y5vkLzgSNx9N5ZVj*
Materiale didattico offline.	• *Rotoli di carta assorbente* • *Cartone* • *Stagnola* • *Mollette da bucato* • *Involucro di plastica* • *Sacchetti di carta* • *Elastici* • *Utensili di plastica* • *Piatti di carta* • *Bicchieri* • *Nastro adesivo* • *Colla* • *Graffette* • *Scovolini* • *Cannucce* • *Forbici*

Scopo della lezione

Al termine della lezione gli alunni sapranno:

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● 1) Utilizzare i materiali per progettare una soluzione a un problema umano imitando il modo in cui piante e/o animali usano le loro parti esterne per aiutarli a sopravvivere, crescere e soddisfare i loro bisogni

Tendenze:

STE(A)M Learning / Collaborative Learning etc.

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DI PALERMO

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Attività

Descrivi qui in dettaglio tutte le attività durante la lezione e il tempo che richiedono. Ricorda che il tuo programma di lezione deve ruotare attorno al tema della bioeconomia.

Nome dell'attività	Procedure	Tempo
Agganciare	Show students a picture of a turtle. Ask, "What are some special parts or structures that this turtle has?" Students will most likely mention the shell since this is a common association with a turtle. Next ask, "Does anyone know what the function or purpose of the shell is?" Hopefully someone will suggest it protects the turtle. Follow up with "How does the shell protect the turtle?" They should conclude that the shell is hard and the turtle can hide inside if something tried to eat it or hurt it.Move on to the concept of biomimicry. Ask students to talk with the person next to them about any human inventions (things we use) that may have been inspired by a turtle's shell. After a minute or so, ask the student pairs to share their ideas. Hopefully they will come up with things like bike helmets, armor, etc. The goal is that they come up with human inventions that are hard like a shell, but also have the job of protecting something. Tell students that today they will use different materials to come up with an invention that is inspired by an animal or plant structure. Remind students they need to keep the plant or animal's structure in mind.	X min
Esplorare	Show students the variety of materials they have to work with. They can work with a partner or small group which might help them with idea generation. Students will need to brainstorm first, and then sketch out a plan before they start to create. If some groups struggle, you can suggest some animals or plants to consider. Some ideas that might be good: birds (wings that help them fly), sharks (teeth that cut things) or ducks (webbed feet to help them swim). Again, their creation could be something totally new or it could be something that already exists. Make sure that they identify the original plant or animal, what feature they are inspired by and what job that feature does.	Xmin
Spiegare	After about 30 minutes, give the groups a chance to share their creations. Tell them they need to tell the class what animal or plant structure (part) their invention imitates and what the function (purpose) of the structure is. Once students have shared their ideas, write the word biomimicry on the board. Explain biomimicry is when people get an idea from living things.	X min
Elaborare	After the video you can give your students an opportunity to revise their designs.	Xmin
Estensione	For older or more advanced students, you could incorporate the steps of the engineering design process into this activity. There are several versions of the engineering design process. Ask students to talk about where in their activity they did each of the steps of the engineering design process.	Xmin
		Xmin

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Valutazione

Descrivi qui il metodo di valutazione della lezione, se presente. Ad esempio, se prevedi di valutare i tuoi studenti con un quiz, includi qui le domande e le opzioni di risposta codificando a colori le risposte corrette.

Gli studenti possono giocare a Kahoot online! gioco a quiz situato sotto il video che fornisce punteggi scaricabili alla fine del gioco a quiz. In alternativa, puoi utilizzare il quiz cartaceo o le domande sui biglietti di uscita