Lesson Plan: Circular Economy and PETKO

|  |  |
| --- | --- |
| Names | Milka Guzina  Milica Živković Raičević  Olga Bojović  Tamara Magovčević |
| Country | Montenegro ( Nikšić) |
| Institution | JU Srednja ekonomsko ugostiteljska skola |

**Goal:**

Gain an understanding of the principles of the circular economy.

Explore PETKO, a machine that turns plastic bottles into filament for 3D printing.

Discuss the impact of PETKA on waste reduction and sustainable production.

Explore the principles of the circular economy through storytelling.

**Materials:**

White board and markers

Projector and screen

Laptop or computer

Printed brochures about the circular economy, PETKA and 3D printing

Samples of 3D printed objects using recycled filament

**Introduction (15 minutes):**

1. **Ice breaker (5 minutes):** A short discussion about plastic waste and recycling. Students share their views on sustainable practices.
2. **Introduction to the circular economy (10 minutes):** Use the whiteboard and projector to present the concept of the circular economy. Emphasize the importance of minimizing waste in the production cycle.

**Main activities (30 minutes):**

1. **PETKO and 3D printing (15 minutes**):

Present PETKO as a machine that turns plastic bottles into filament for 3D printing.

Share pictures or videos showing PETKO in action and discuss its role in sustainable manufacturing.-Talk about the creativity and innovation behind PETKO's design and purpose.

1. **3D printing demonstration (15 minutes):**

Show the 3D printer and explain the types of filaments used.

Discuss the benefits of using recycled filament, including environmental and cost-effectiveness benefits.

**Group activity (30 minutes):**

1. **Practical 3D printing (25 minutes):**

Allow students to examine samples of 3D printed objects using recycled filament.

Divide the class into small groups to discuss the potential of recycled filament in 3D printing, create a short story or skit involving PETKA in a scenario that promotes circular economy practices. Encourage creativity and emphasize the positive impact of their stories.

**Group discussion (5 minutes):**

Facilitate a discussion in the class about the broader implications of PETKO in the context of the circular economy and sustainable production. Each group presents its story or skit to the class.

**Conclusion (10 minutes):**

1. **Reflection and summary (10 minutes):**

Summarize key points discussed during class.

Ask students to think about the importance of PETKO and how it is aligned with the principles of the circular economy. Discuss the various Petko stories and their underlying circular economy themes. Ask students to think about the power of storytelling in communicating environmental messages.

**Assessment:**

Participation in group discussions and activities.

The quality of reflection in the conclusion.

Understanding demonstrated during a hands-on 3D printing activity

Creativity expressed in PETKO design and storytelling.

The quality of reflection in the conclusion.

**8. Homework:**

Research and write a short essay on the role of technology, such as PETKO, in promoting circular economy practices.

​