CLIL

STEAM

MATERIALS • UDA 5: CERAMICS

Feltrinelli Scuola

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1. CREATE YOUR OWN MAP

Have a look at the mind map below, then sketch your own version in your exercise book.

CERAMICS

ORIGIN AND COMPOSITION

- Clay + Water
- Feldspar
- Silica
- Other minerals

PROPERTIES

- Hardness
- Strength
- Plasticity
- Brittleness
- Porosity
- Refractoriness

Handcrafted PRODUCTION

- Slip casting
- Throwing
- Decoration
- Firing

Industrial PRODUCTION

- Slip casting
- Moulding
- Extrusion
- Decoration
- Cutting
- Drying
- Firing

TYPES OF CERAMICS

- Terracotta
- Earthenware
- Porcelain
- Stoneware
- Advanced ceramics

SUSTAINABILITY

- Waste reduction
- Reuse of ceramic powders
- Energy efficiency
- Reduced water consumption
- Lower pollutant emissions

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2. CREATE YOUR OWN TEST

a. Indicate whether the following statements are true (T) or false (F).

1. The main component of ceramics is silica sand.

T F

2. Ceramic production requires a minimum melting temperature of 2000°C.

T F

3. Ceramics are fully recyclable.

T F

4. Porcelain is a fine ceramic with ancient Chinese origins.

T F

5. Advanced ceramics are specialised materials used to create high-performance objects.

T F

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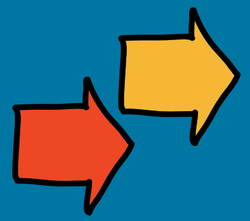
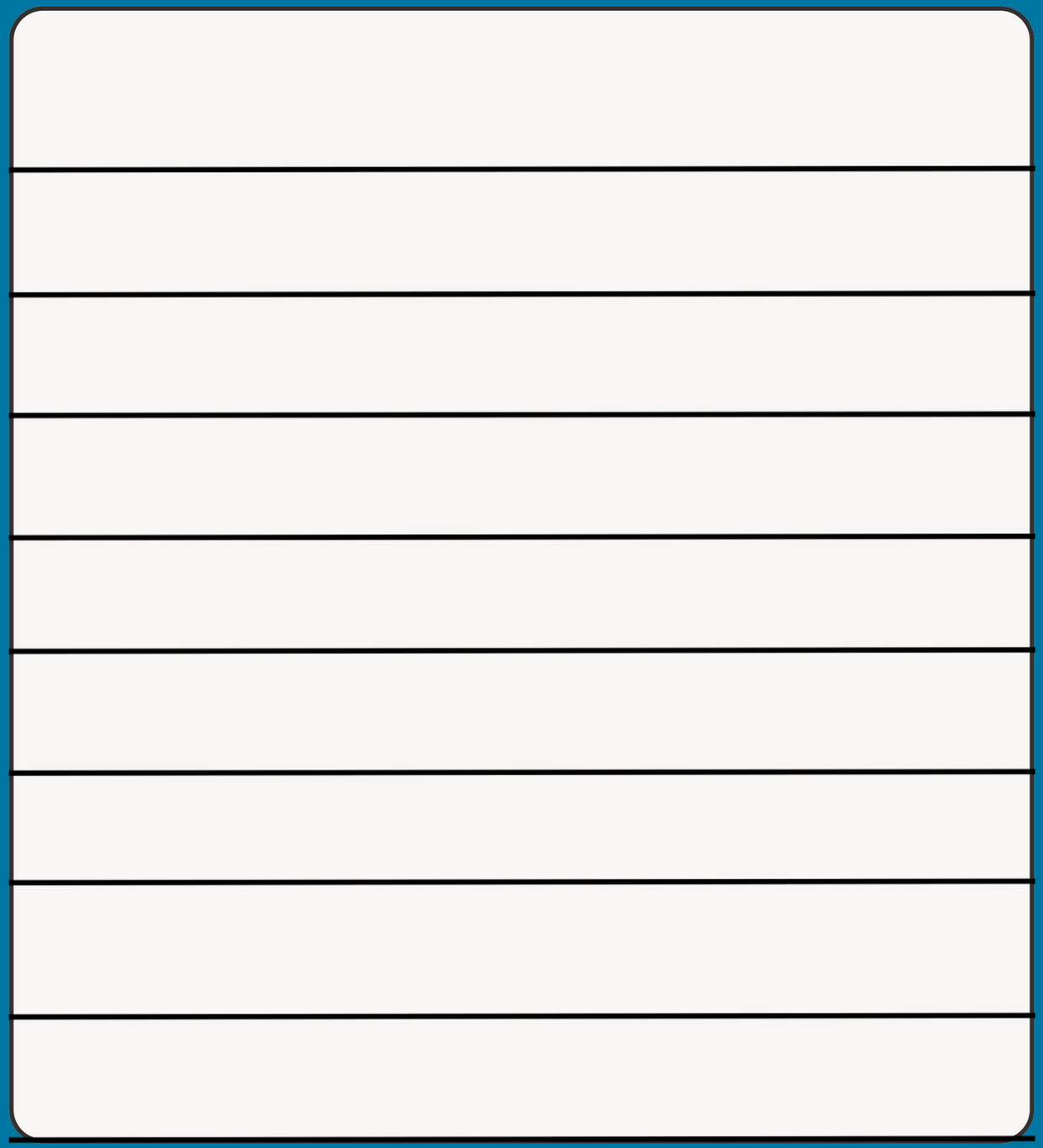
2. CREATE YOUR OWN TEST

b. Create Five New True/False Questions to Share with the Class





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3. ANALYSIS OF TILE PRODUCTION DATA

The table presents data on tile production in Italy from 2019 to 2023. It highlights a **general upward** trend, except for a decline in 2020, likely due to the impact of the COVID-19 pandemic.

Choose the most suitable graph or chart to **represent the data**. You can draw it on squared paper, graph paper, or create it using an Excel spreadsheet.

YEAR	PRODUCTION
2019	415
2020	380
2021	395
2022	410
2023	430

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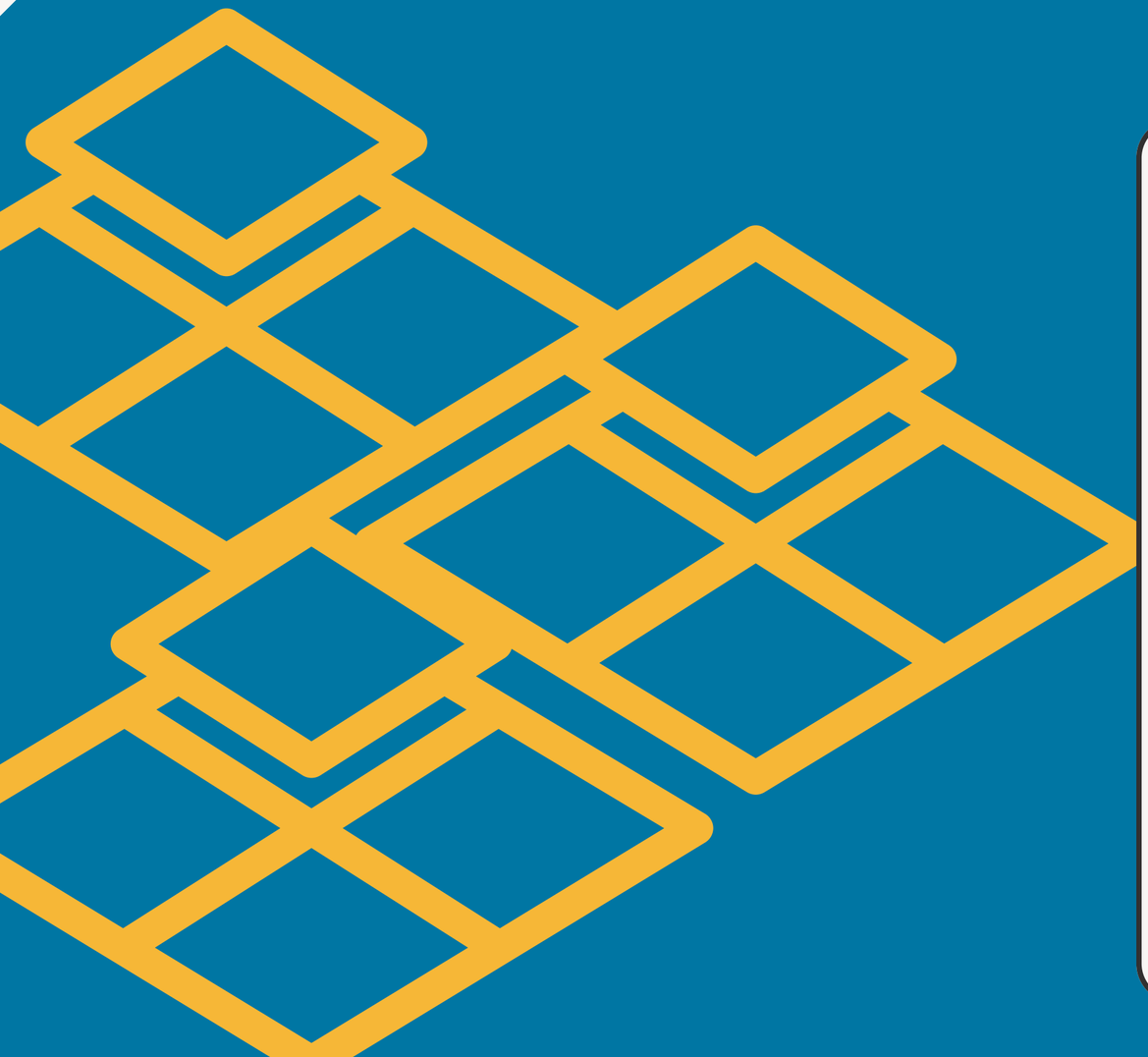
4. CALCULATING TILES FOR A ROOM



Pick a tile type and size from a ceramic catalogue found online. Work out **how many tiles are needed** to cover the 3x4 m² floor of a room.
Remember to **consider the tile shape and dimensions**, as well as **a 10% allowance for wastage** during installation. **Compare your results** with your classmates.

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5. ITALIAN-MADE CERAMICS

Italian artisan ceramics are an important part of the country's cultural and artistic heritage. Each region has developed its own unique styles and techniques, valued not only for their aesthetic beauty but also for the craftsmanship behind them. Some of the most renowned ceramic-producing locations include **Albisola** (Liguria), **Faenza** (Emilia-Romagna), **Deruta and Gubbio** (Umbria), **Capodimonte in Naples** and **Vietri sul Mare** (Campania), **Grottaglie** (Puglia), and **Caltagirone** (Sicily).

Choose one of these locations, or another from your region, **as an example of traditional ceramic production**. After researching online, **create a short presentation (5-6 slides) on the area's ceramic traditions**. If you have the opportunity to visit a workshop, you could also record a short video showing part of the production process.

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6. THE TRADITIONAL CRAFT TECHNIQUE OF WHEEL THROWING

Use the QR code in your book to conduct **a brief research** (maximum 150 words) **on the pottery wheel technique for making a ceramic vase**. Also, search online for **images and videos** that demonstrate this technique.
Once completed, **present your findings** and compare your results with the class.

How?

EXAMPLE IN LESS THAN 150 WORDS

The pottery wheel technique is a traditional method for making ceramic vases. It begins with a lump of clay placed at the centre of a spinning wheel. The artisan shapes the clay with wet hands as the wheel turns, gradually forming the desired shape of the vase. As the wheel spins, the pressure from the hands and the use of specific tools help achieve the height and symmetry of the vase. Once the shape is formed, the vase is left to dry. After drying, any imperfections are smoothed out. The vase can then be decorated and glazed to add colour and protection. Finally, it’s fired in a kiln at a high temperature to make it strong and durable. Throwing on the wheel requires skill, precision, and practice to produce high-quality pieces.