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# Course 1 – Day 3

Entrepreneurship

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# Entrepreneurship - narrow and broad concept

**Entrepreneurship as doing enterprise**

- In school and educational politics entrepreneurship is commonly associated with starting and running student enterprises

**Pedagogical entrepreneurship**

- A broader interpretation of entrepreneurship includes many skills related to exploration and innovation.

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# Innovations through science or practical work?

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# STI – Science, Technology, Innovation

- Innovation is mainly a result of systematic research in science using high technology
- It is regarded as the main way of doing innovation in modern western societies
- It has a particular strong position in the liberal market economies in the Anglo-American world
- It is also the main approach in the innovation policy of the Norwegian government
- This way of doing innovation is especially prominent in south-east Norway. Oslo Cancer Cluster is a good example

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# DUI - Doing, Using, Interacting

- Along the coast of Norway we find some very innovative regions
- They have long traditions with industry related to shipbuilding, machinery and furniture
- The innovations in these industries have been developed through practical work – “a try and fail strategy”
- The fishing boats of north Norway are excellent examples of incremental innovations through generations.

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# CCI – Combined and Complex Mode of Innovation

- In a high technology world it has gradually been difficult to rely solely on practical innovations
- In maritime industries you have to do systematic research and development in order to succeed
- Norsafe – a producer a lifeboats is a good example
- It seems that this CCI approach has strong positions in more coordinated market economies like Germany and Scandinavia

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# 5. Group work assignment

## - Is this narrow or broad concept of entrepreneurship?

- Work in groups
- Discuss the given example from mathematics: Could this be interpreted in the narrow or broad concept of entrepreneurship? What skills do you need in entrepreneurship?

Picture: Pixabay.com

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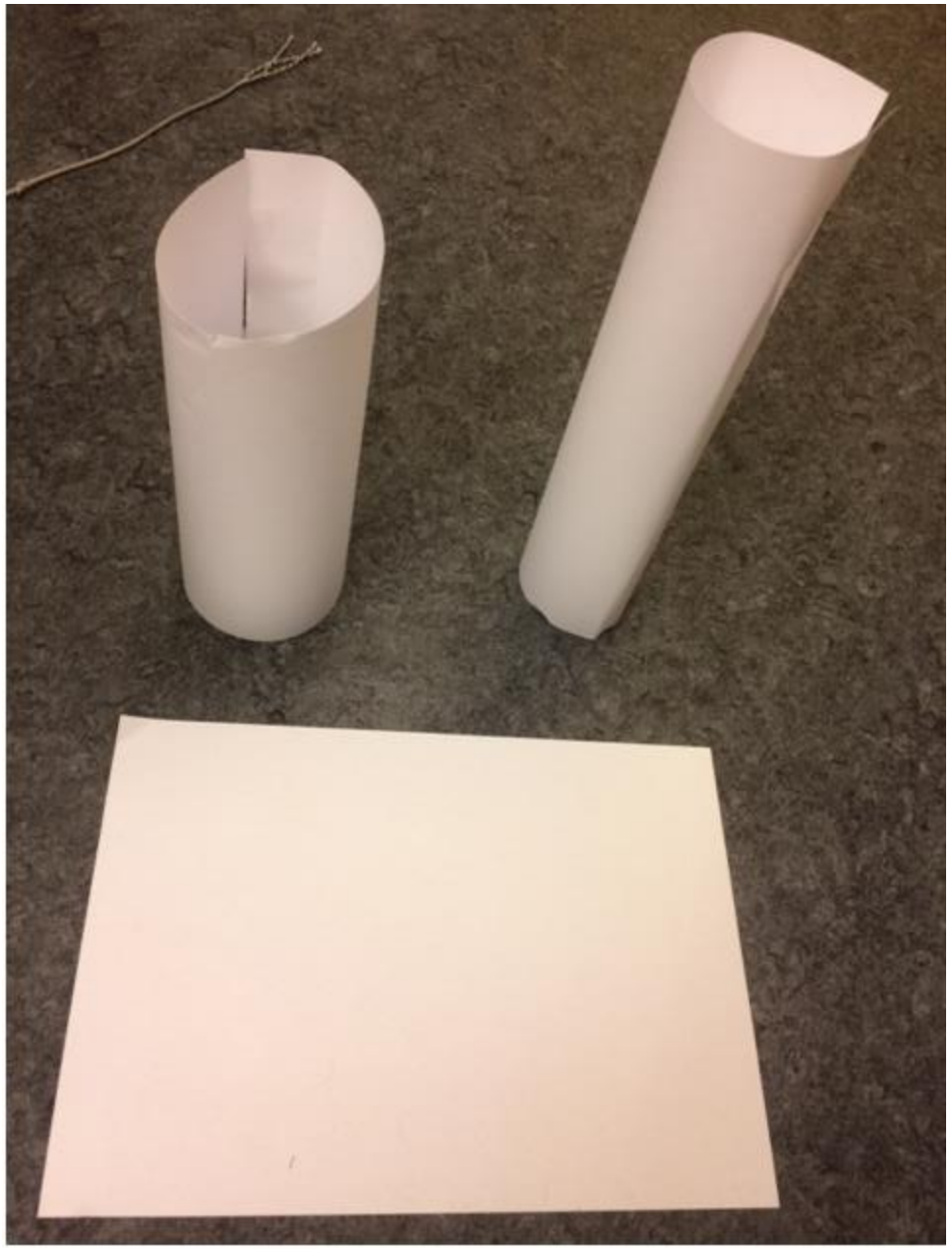
# Area and volume.
# Design



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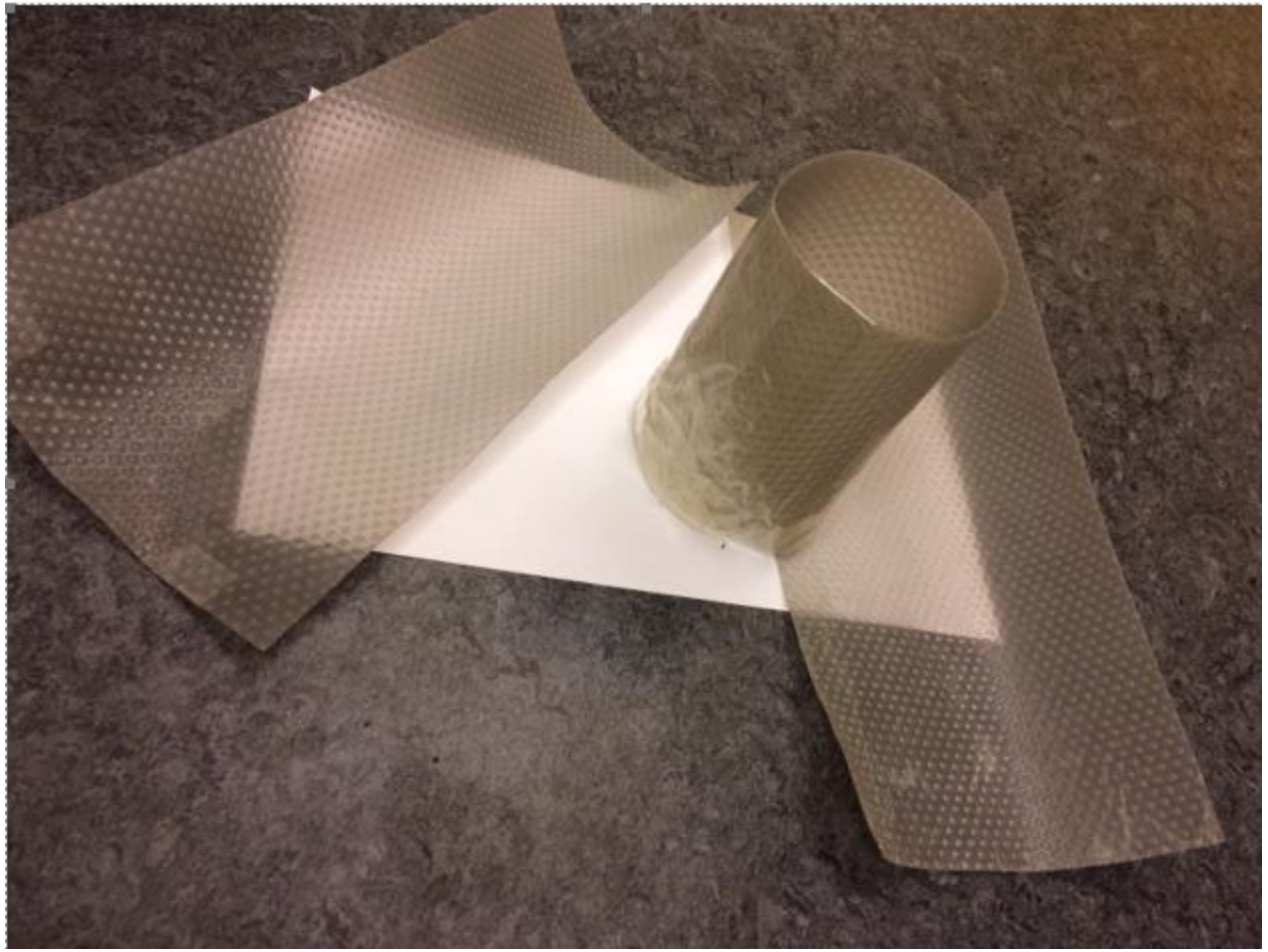

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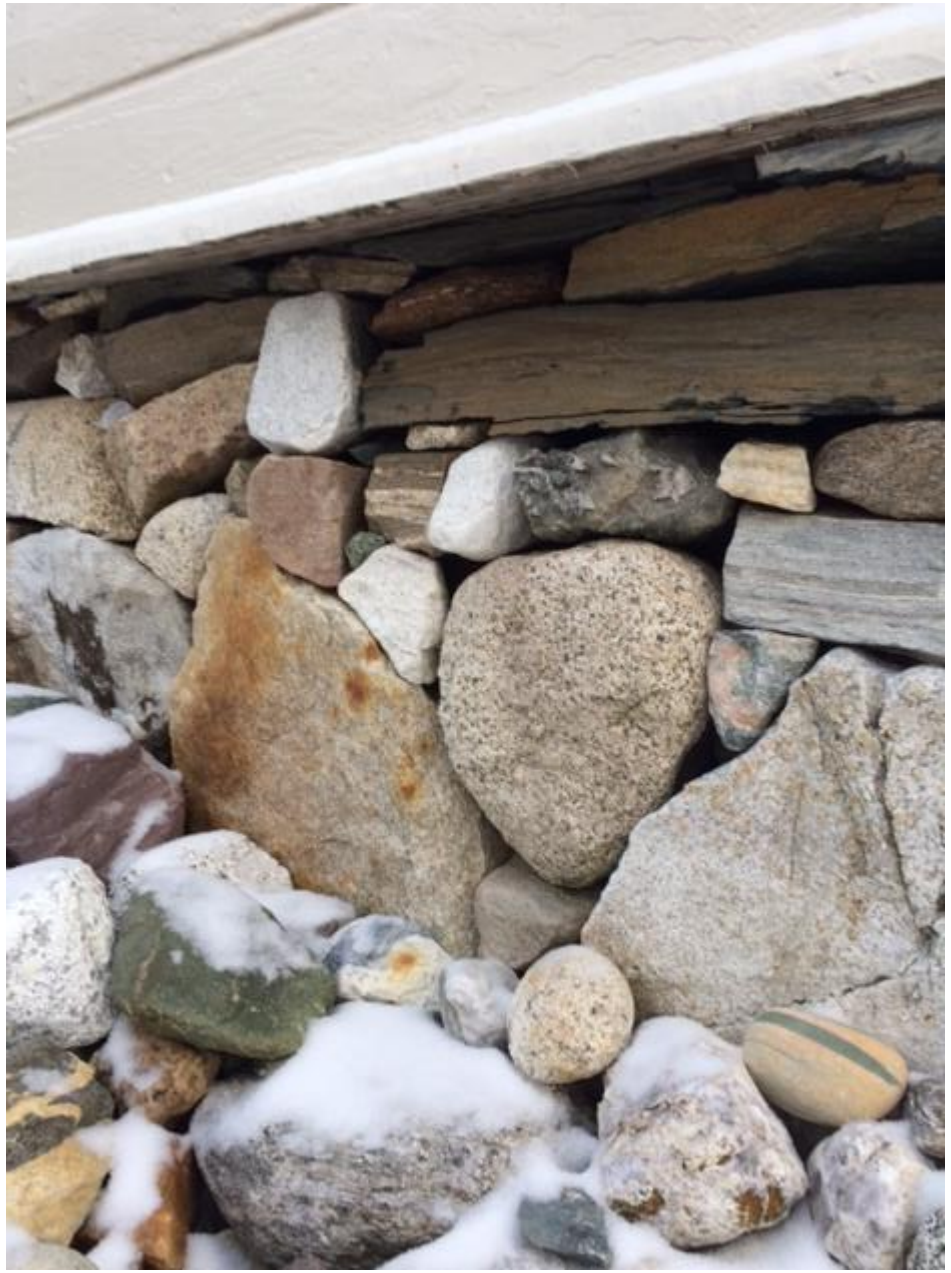
To build a foundation for a house



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# Way of working:

1. Into context
2. Workshop
3. Prepare presentations
4. Math Congress
5. Mini lessons

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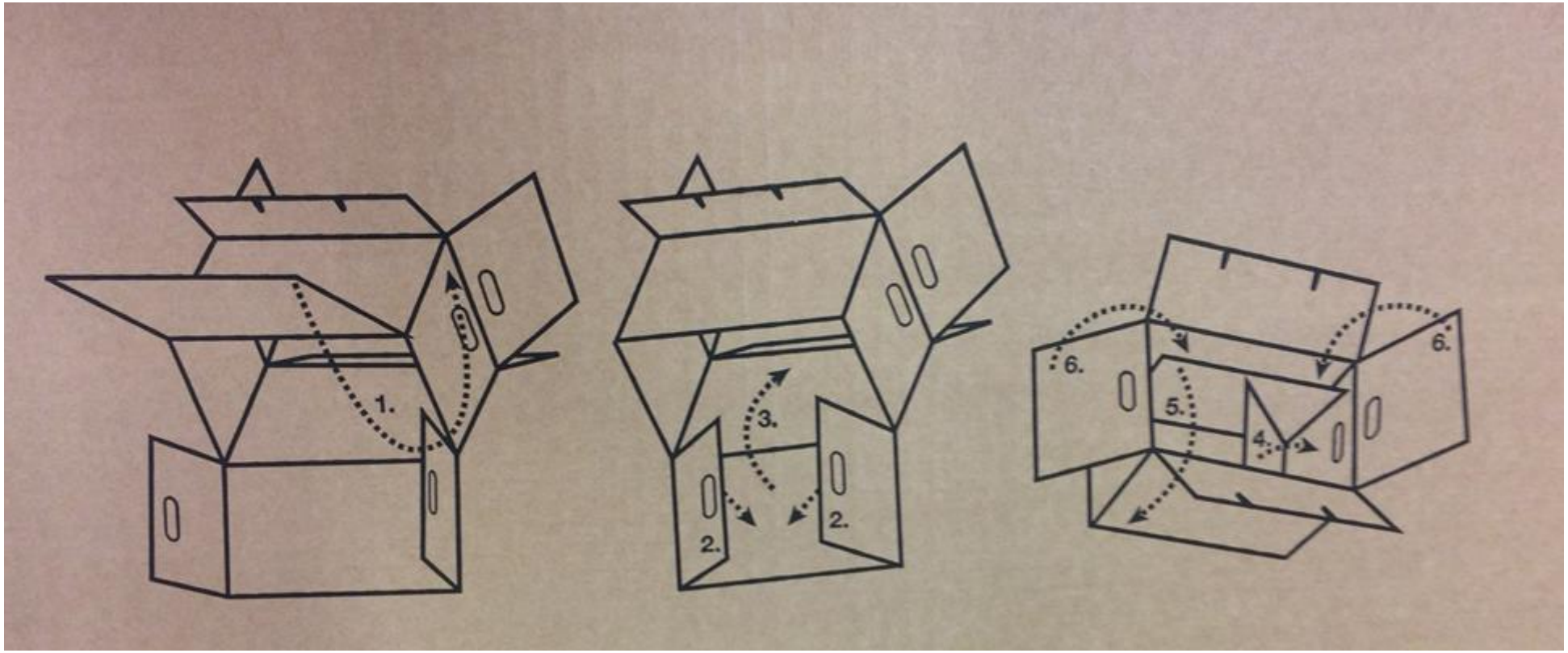
# To fold a box



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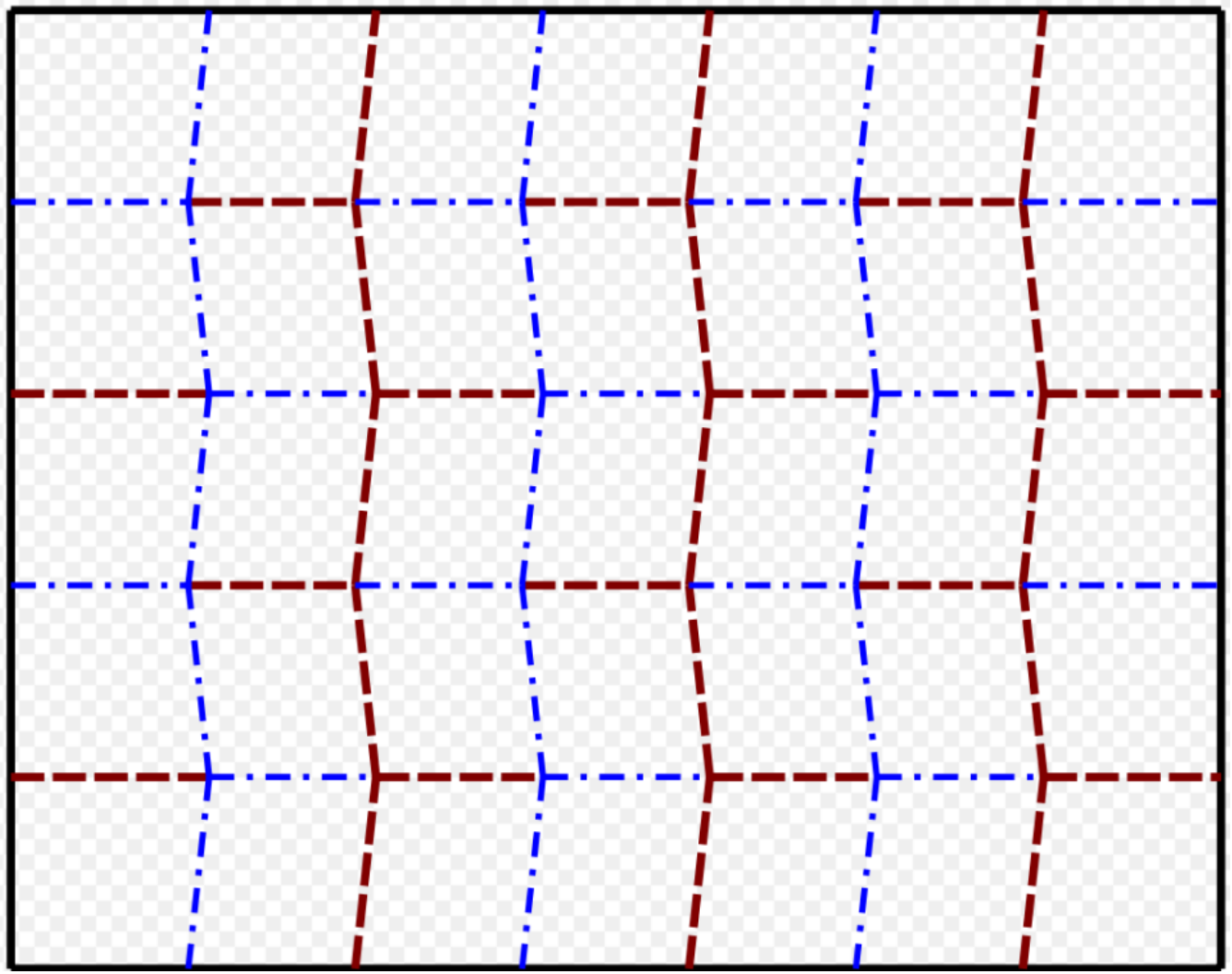

https://no.wikipedia.org/wiki/Miurabretting#/media/Fil:Miura-ori.gif

# Masu box

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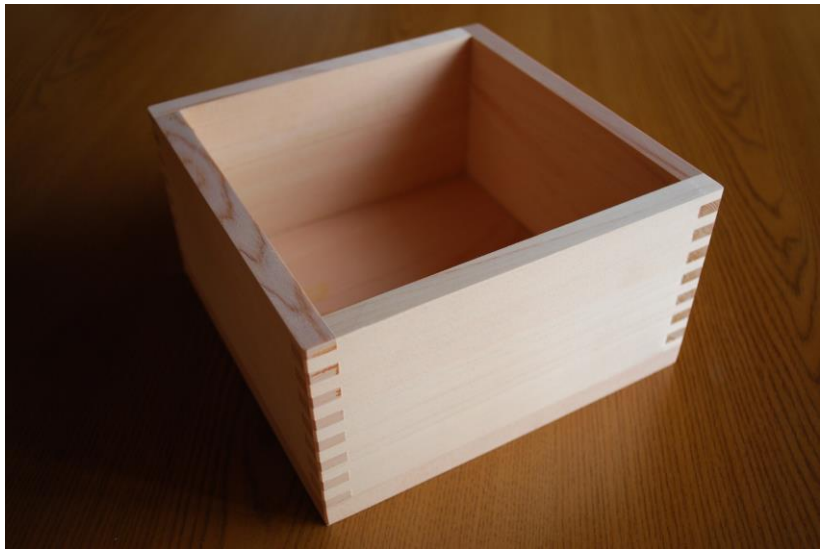

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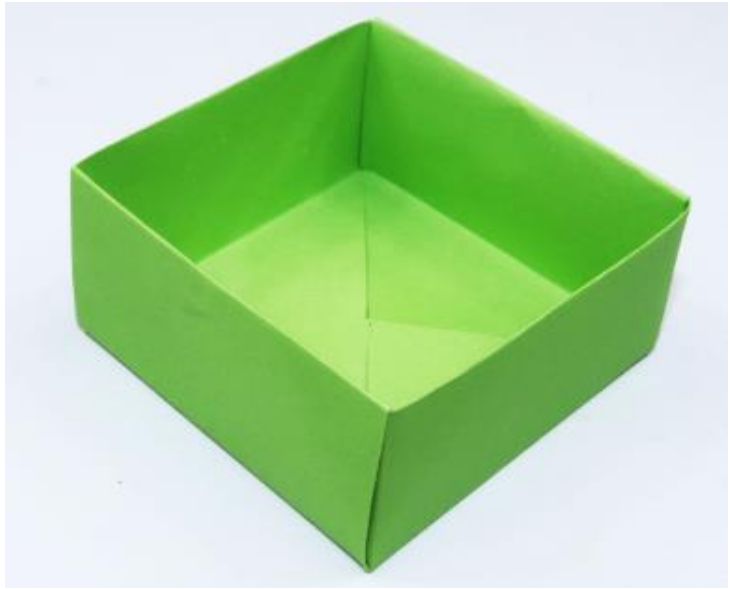
# Masu boxes

For more than 1300 years Masu boxes has been a part of Japanese culture. Traditionaly made of wood with a quadratic bottom. Used for meassuring of rice.

We are going for a paper version.
The resulting form is half a cube

Starting point: A square paper.



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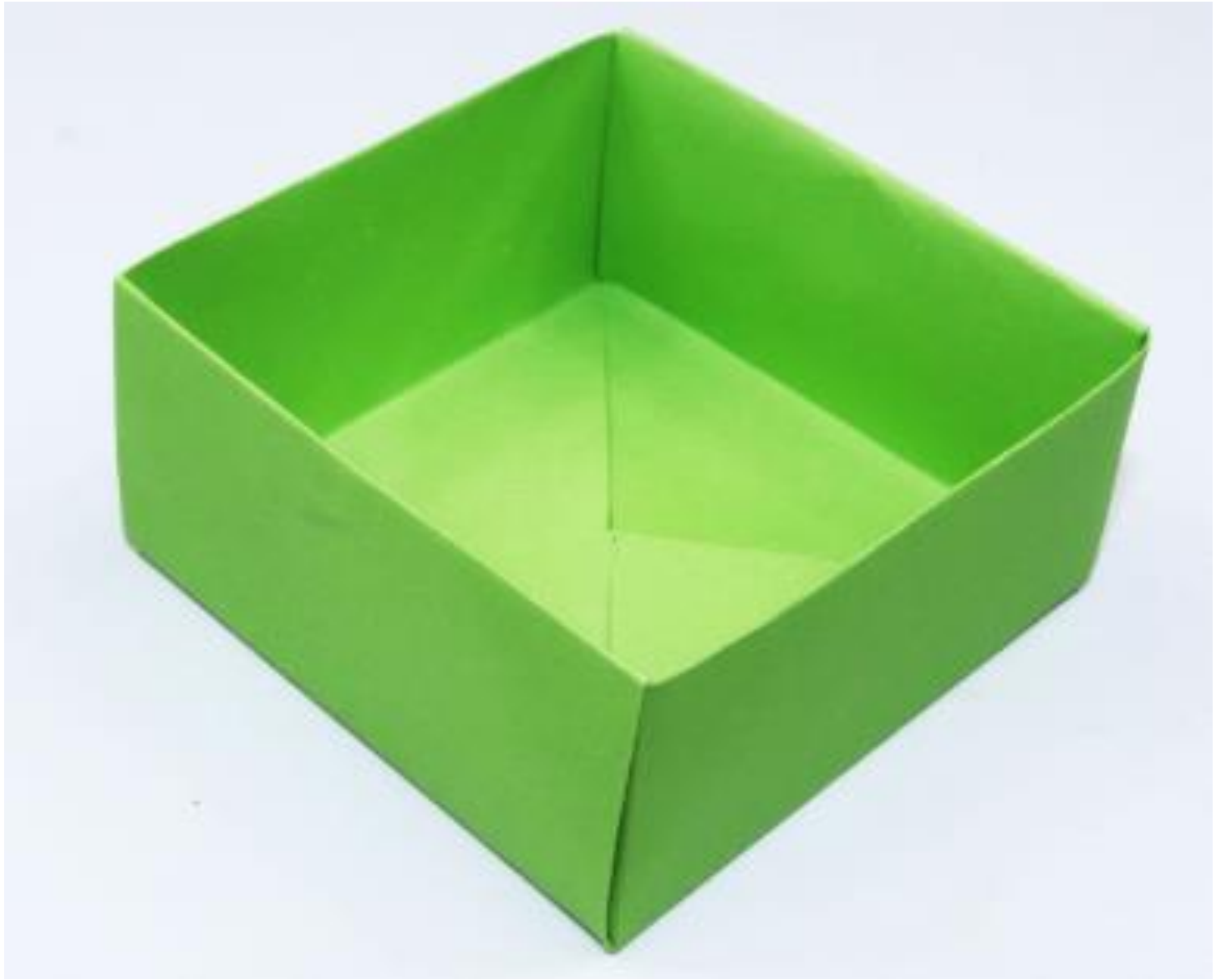
# Masu box



https://www.youtube.com/watch?v=Cd5Z8hmcb10

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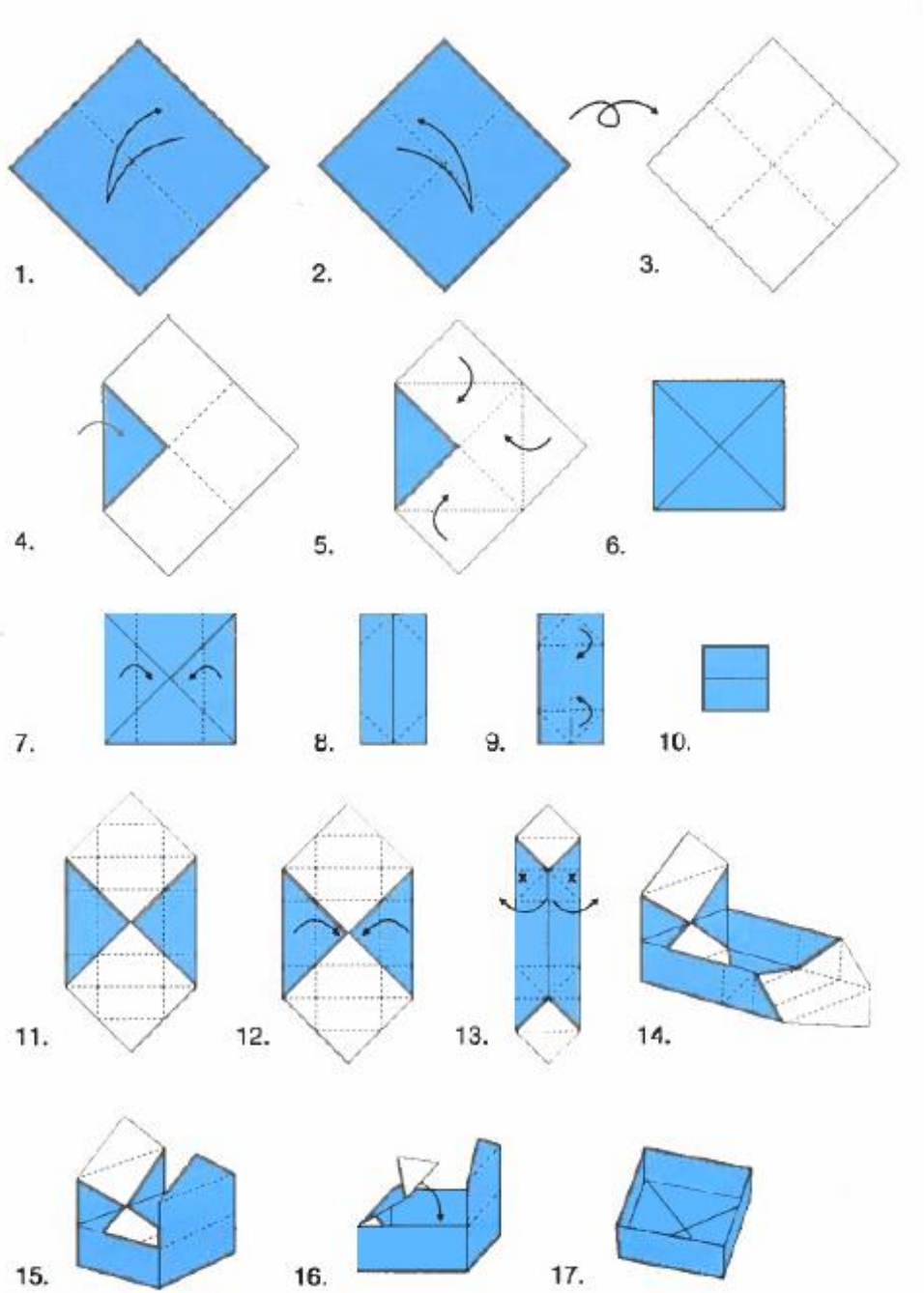

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# 2. Group work assignment

**Challenges:**

1. What is the volume of the small box (20x20 cm)?

2. What is the volume of the big box (30x30cm)?

3. How large is the bigger one compared to the smaller one?

4. How do the length of the sides of the square paper relate to the volume of the box? Study the figure showing the unfolded paper showing the bottom in red.

5. Can you plan for making a box with a volume of 0.5 liters?

Work in groups

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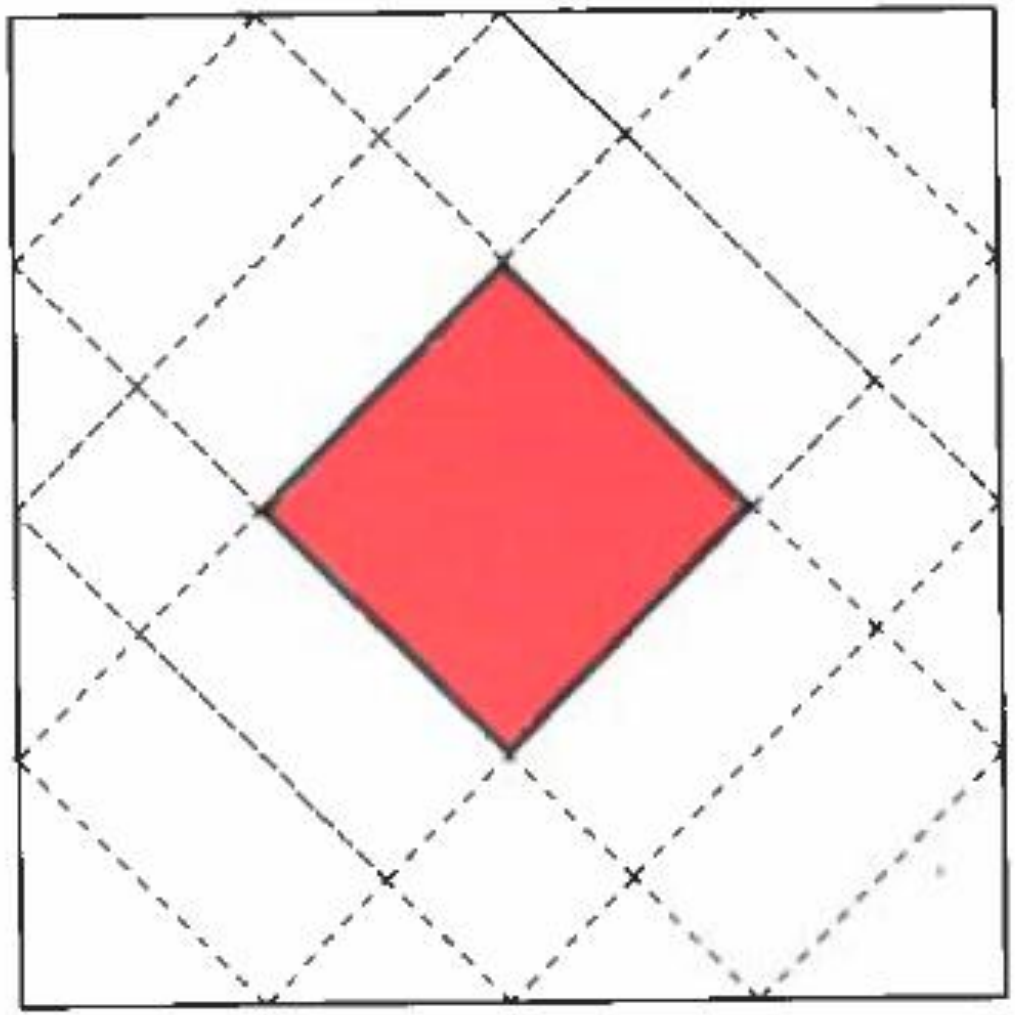


*The landscape of learning: area and volume on the horizon showing landmark strategies (rectangles), big ideas (ovals), and models (triangles).*

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# Avalanche