NORSMA10

Workshop

4. november, 2021

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Nasjonalt senter for matematikk i opplæringen

NTNU

Kunnskap for en bedre verden

What to do?

- Work with some of the activities from the online resources.
- The activities are related to observing and developing students' strategies in computation.
- Discussion about how this kind of work will strengthen the team around the child.

Through the workshop you will work in groups and take part in plenary discussions.

The team around the child and professional developement

- Background
- Online resources
- Exampel of modules

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National strategy for science subjects

Four targets

- Improve children and youths competence in science subjects
- **Reduce the number of low-achieving students in mathematics**
- Increase the number of students who achieve on high and advanced level
- **Increase teachers competence in science subjects**

Our task

In cooperation with Statped we have:

- Developed online resources for competence building
- Arranged annual network-conference

Target group

- In-service teachers
- The educational and psychological counselling service (PPT)
- Teacher educators

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«Sammen om oppdraget 2021»

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What decisions did we take?

Research

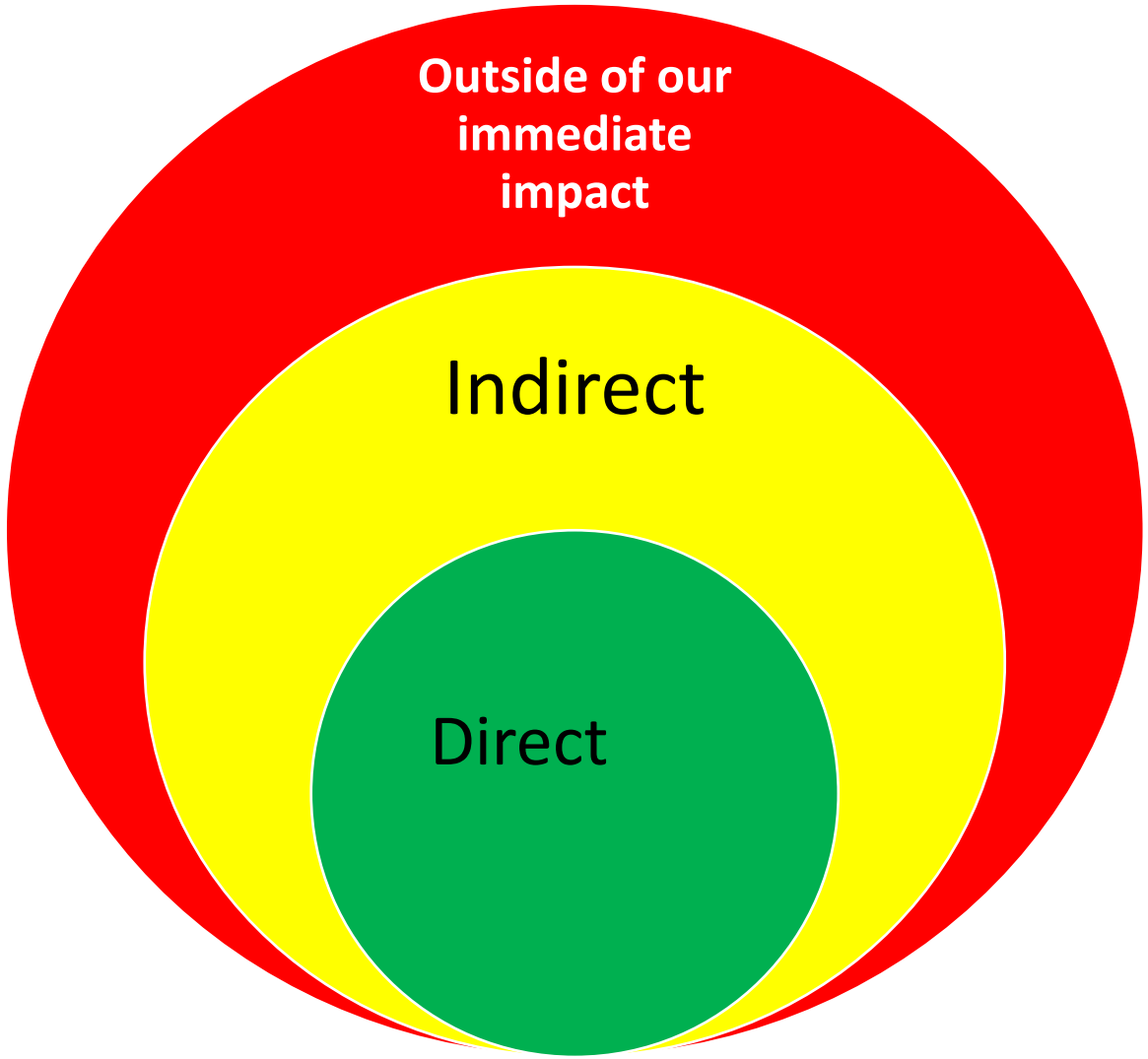
- Special needs education in Norway
  - Individual
  - Expectations
  - Students did not get better

View of

- Students
  - All students can learn important mathematics
- Mathematics
  - Inquiry-based teaching
- Math difficulties
  - System rather than individual

What can teachers change?

- Student?
- Parent?
- Curriculum?
- School environment?
- Schedule?
- Instruction?
- Teacher?
- PPT?



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Mathematics difficulties and differentiated instruction

Om matematikkvansker og tilpasset opplæring

Vil du få flere elever til å mestre og engasjere seg i matematikk? Matematikksenteret og Statped har utviklet ressurser for lærere og ansatte i PPT for å utvikle og styrke kompetanse og samarbeid om elever som har behov for ekstra støtte i matematikk.

About mathematics difficulties
and how to deal with the diversity.

How to get students engaged in mathematics?

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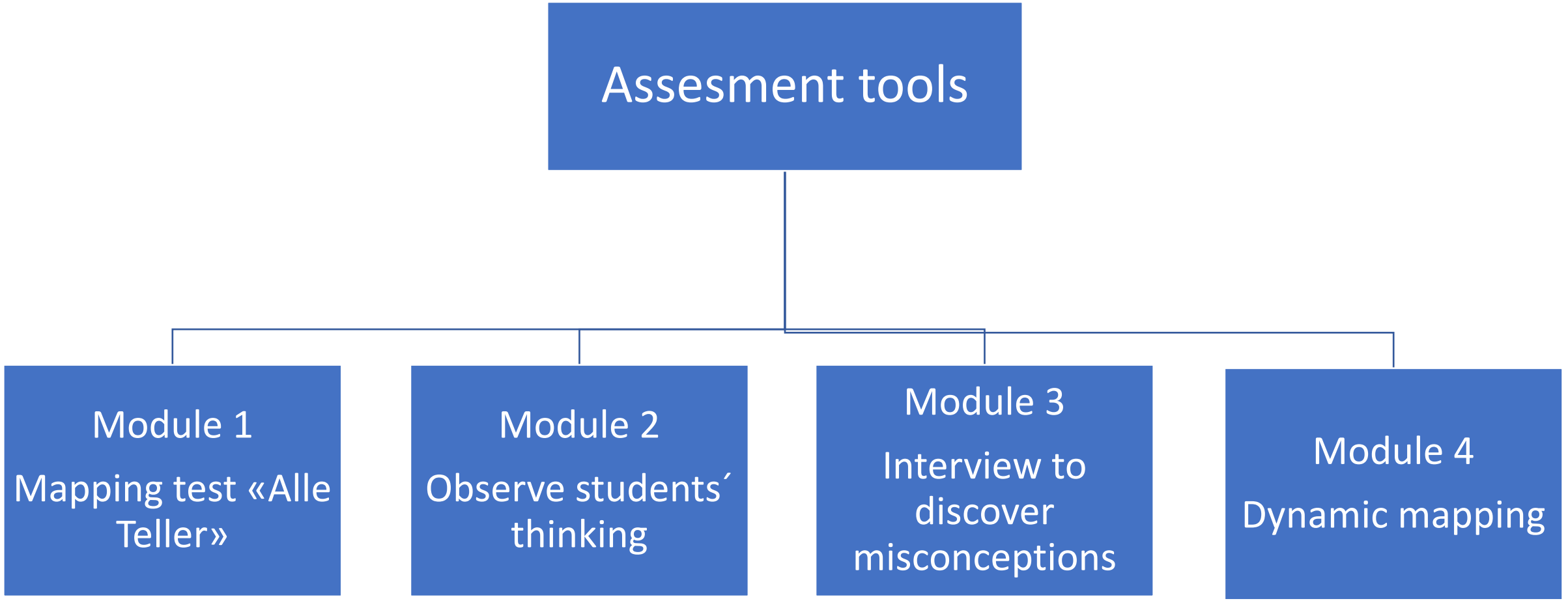
[Matematikkvansker og tilpasset opplæring | Matematikksenteret]

Structure

1. How to start?
2. Assessment tools
3. Follow-up assessment
4. Mathematics for all students

How to start?

- PPT
- Module 1
  - Difficulties in mathematichs
  - – what does it mean?
- Module 2
  - Investigate the school's assessment and follow-up practices
- Module 3
  - Be inspired to include



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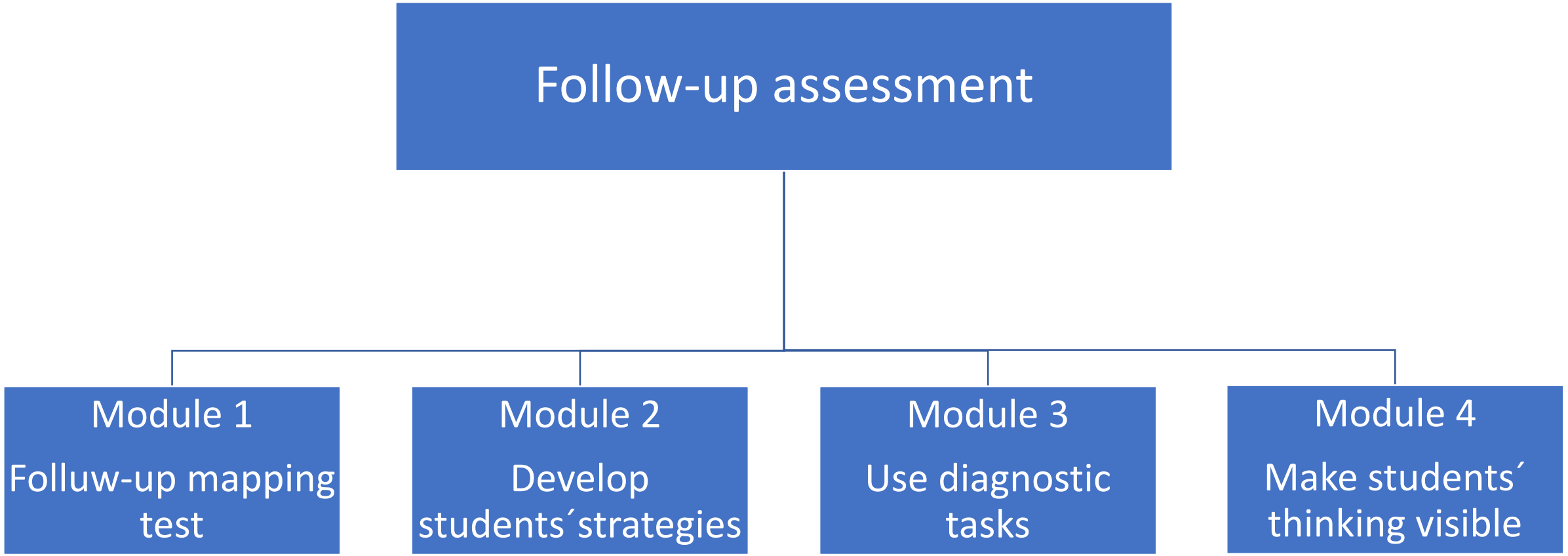

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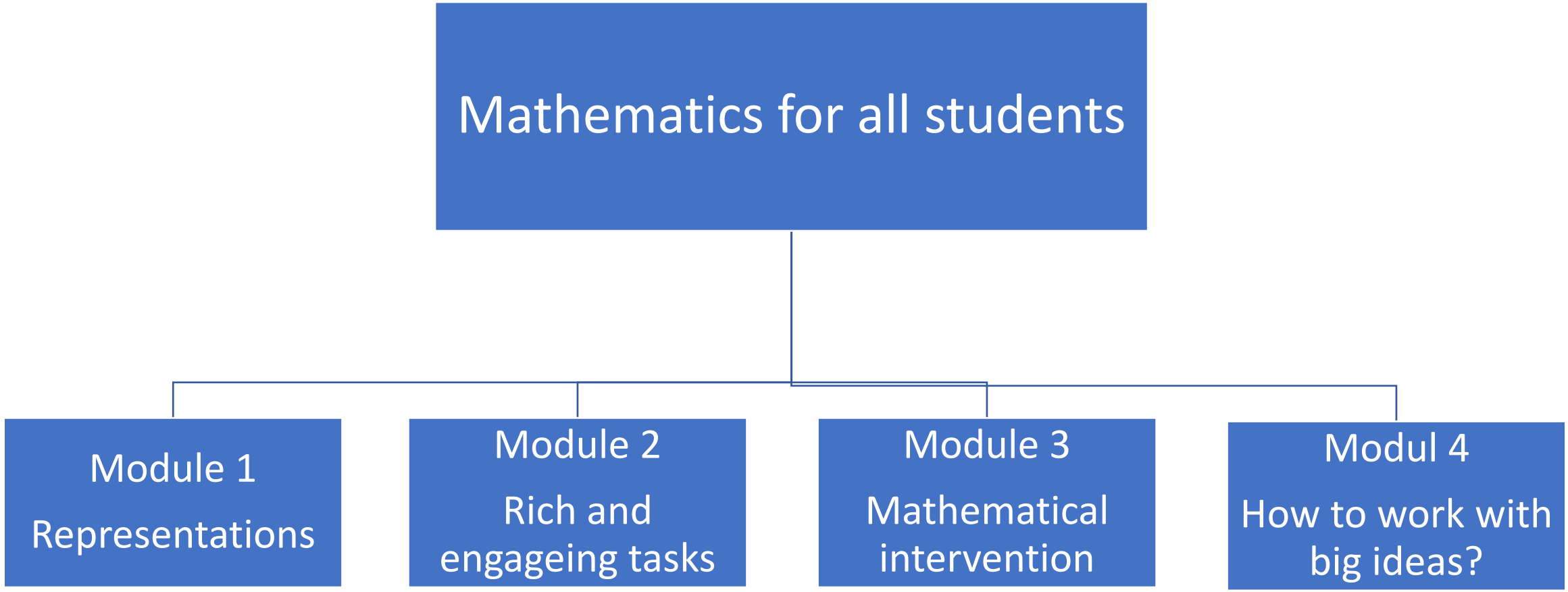

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What`s the goal with the recourses?

We want teachers and employees at PPT to

- develop some common tools for assessment and how to follow-up
- develop a common language
- be curious about students´thinking
- focus on what students´can do, rather than what they can not

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Assessment tools

Module 2

Observe students' thinking

How will students solve 5 + 9?

- Write different solutions in Google jamboard

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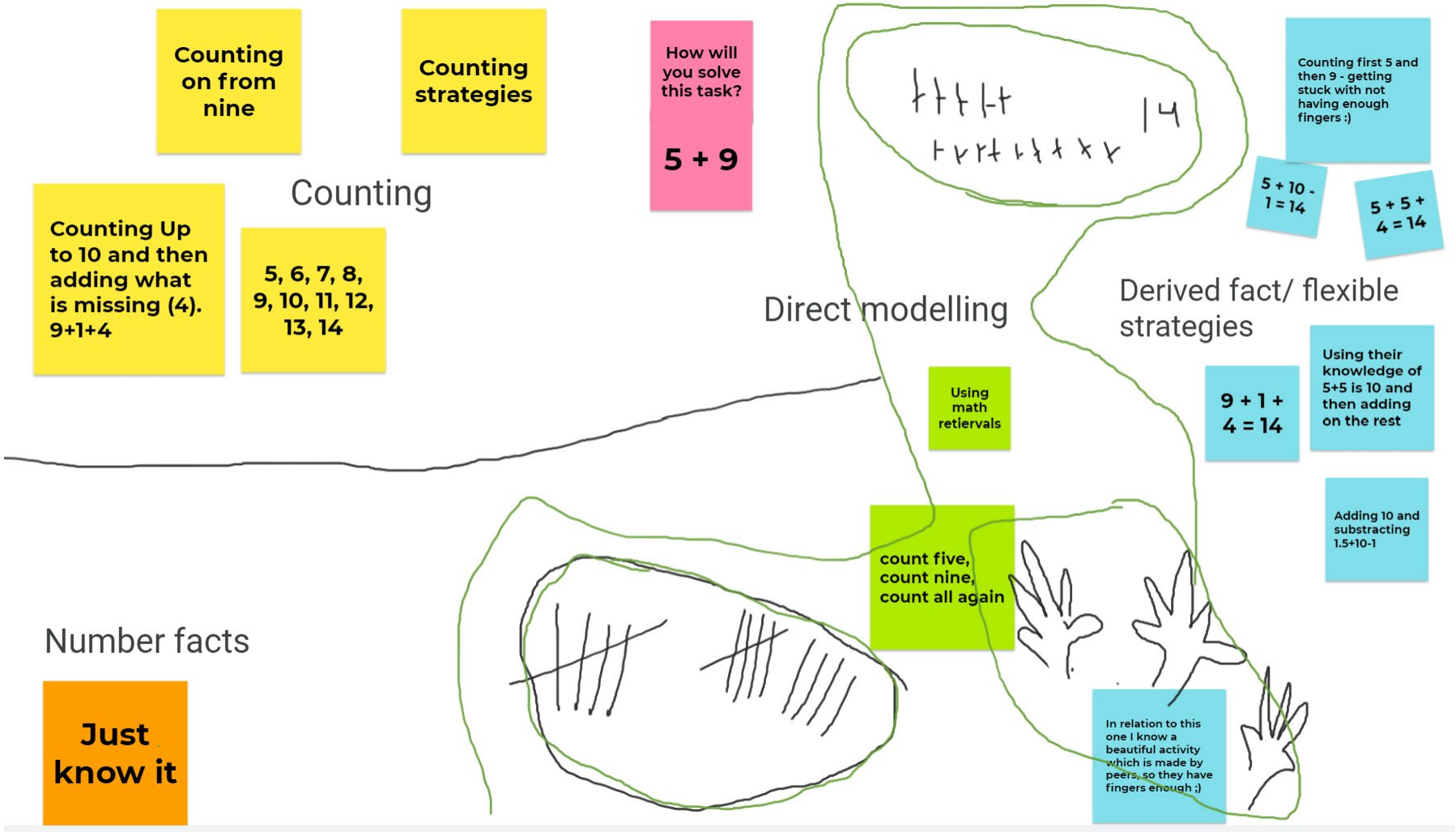
Jamboard from Workshop



What can you say about the students´thinking?

While you watch the videoes, take some notes:

Name	Task	Describe what the students did	Strategies
Magnus	5 · 7		
Ragnar	5 + 9		
Magnus	16 – 7		
Maya	56 : 8		
Karianne	5 · 7		
Magnus	Problem		

Follow-up assessment

Module 2

Develop students´strategies

Number Strings

GOAL:

After 2. grade the students are supposed to explore the commutative and the associative property in addition and use it in mental calculation

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Number Strings

198 + 7

198-199-200-201-202-203-204-205 (fingers)

198 + (2 + 5) = (198 + 2) + 5

198 + (10 – 3)= (198 + 10) - 3

198 + 2 + 7 – 2 = 200 + 5

190 + 8 + 7

198	7
198	2 | 5
198	2 | 5
200	5
205	

199 + 13

27 + 148

139 + 43

a	b	$a + b$
a	c | d	$a + (c + d)$
a	c | d	$(a + c) + d$
$a + c + d$		

Associative property in addition

$a + (c + d) = (a + c) + d$

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Important questions in the discussion

- How do these activities influence the view of learning and teaching mathematics?
- How do we position children as learners?
- How can these activities enhance the cooperation between different members of the team around the child?

How do you think about …?

- Discussion in Break Out Rooms
- Questions on a Padlet

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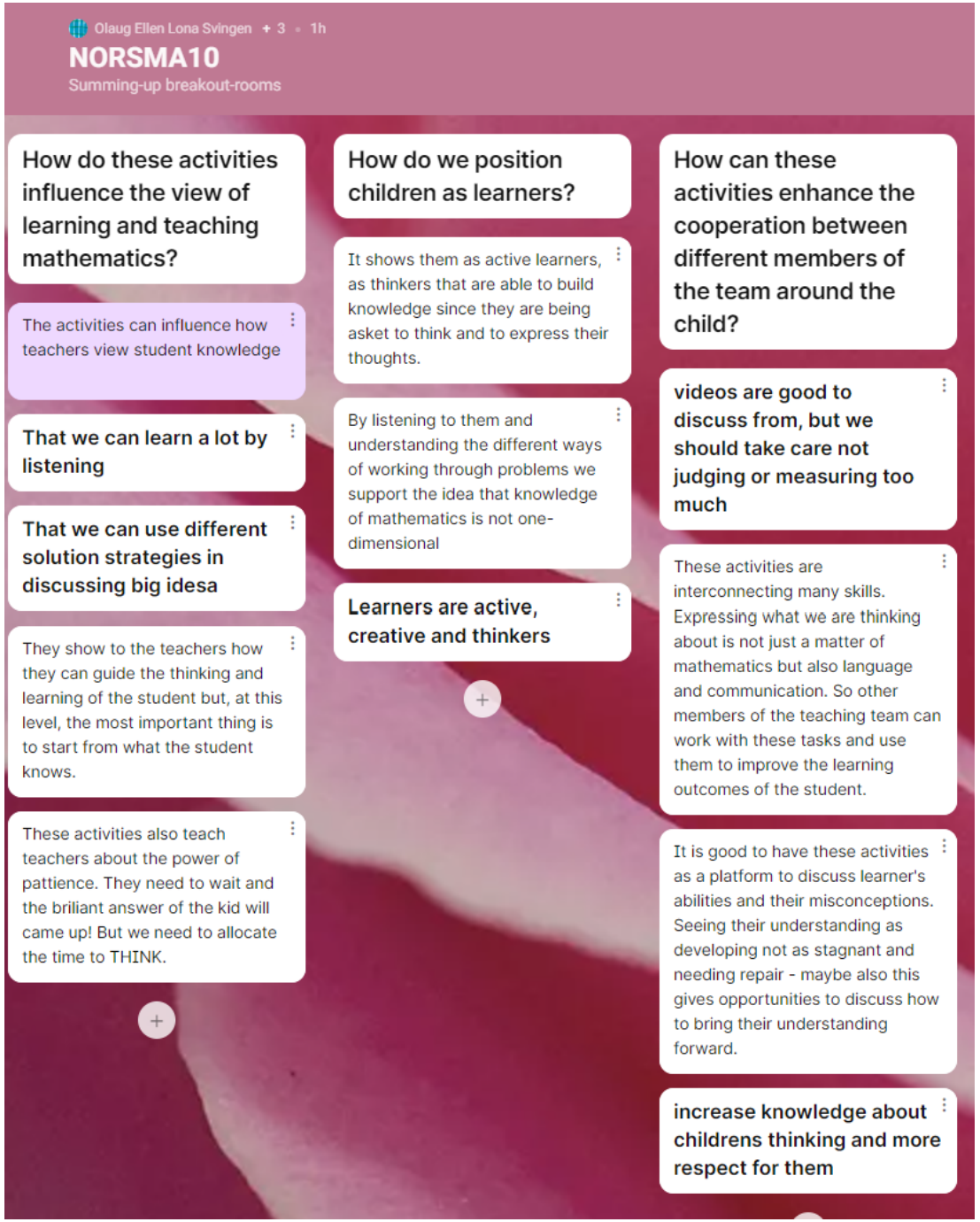
Comments on the padlet



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Summing up activity in Padlet

- Comments?
- Questions?

Thank you for your attention!

https://www.matematikksenteret.no/

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