

# Embedding Numeracy into a trades course.



# Background to study

- Students were part of a 20 week course to get them back into employment.
- They were involved in a landscaping/ carpentry context.
- Students were having difficulty retaining numeracy ideas that were being taught in a very traditional manner.
- The tutor was keen to look at other approaches.

# The Students.

- Students had low numeracy skill
- A number suffered from 'maths anxiety'.

$$\text{Math Anxiety} = \text{Test Anxiety} \left( \text{Fear of numbers} + \text{Fear of unknown} \right)$$

- Students had limited attention and retention.
- Eight learners were involved.

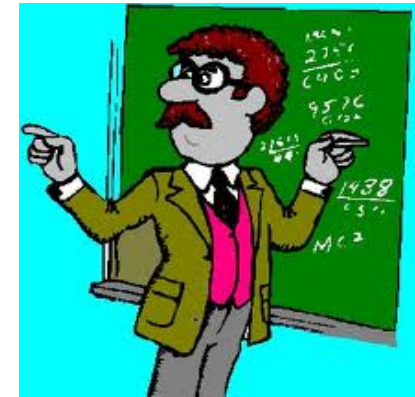


# Discussion with Tutor

- What numeracy is required in the course?
  - four basic computations.
  - ability to measure.
  - knowledge of the metric system
  - Knowing about square numbers and square roots of numbers
  - Knowing what a right angled triangle looks like.
  - Knowing how to round numbers to 2 and 3 decimal points.
  - Being able to estimate the reasonableness of an answer.

# What approach should we take?

- The traditional approach



- Using equipment (manipulatives)



# Finding out what the learners know.

- We devised a short assessment.
- Students were allowed to use calculators.





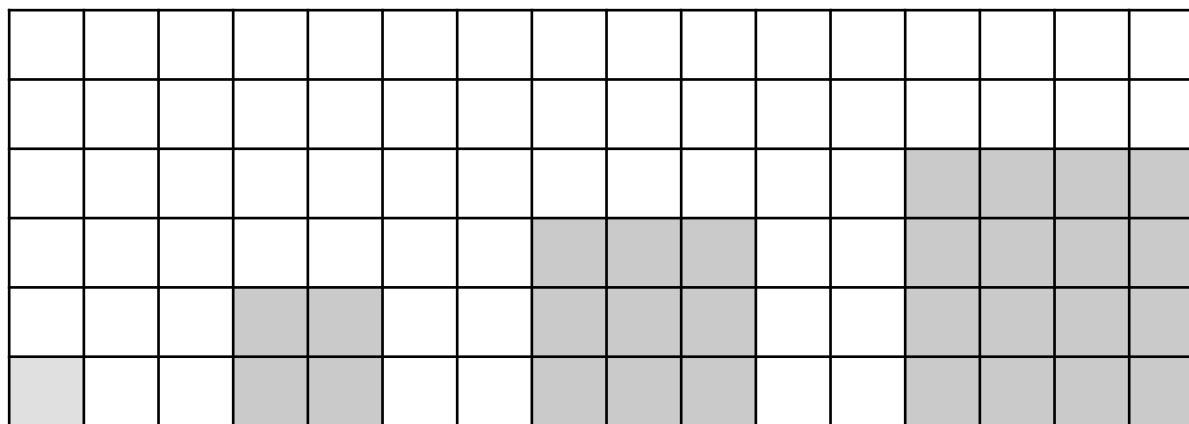
# The Results

- Of the eight students no one got everything correct.
  - one learner got 13 correct.
  - one learner got 11 correct.
  - two learners got 7 correct.
  - four learners got less than 5 correct.



# What to do?

- Working along side the tutor we discussed what was practical to achieve.
- How were we going to teach some of the ideas needed?



1 x 1

2 x 2

3 x 3

4 x 4

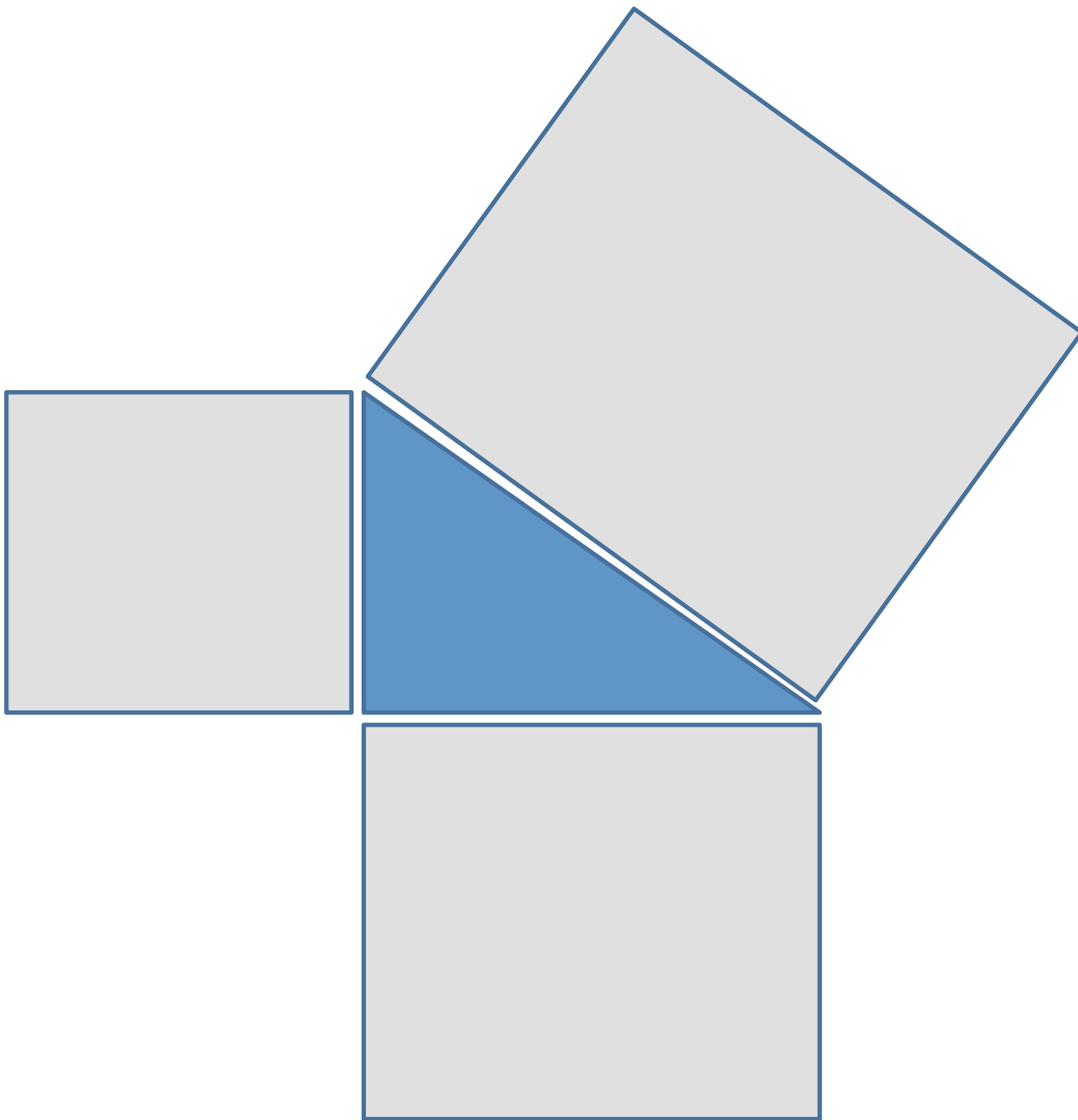
$1^2$

$2^2$

$3^2$

$4^2$





## After the teaching.

- For a week the tutor spent 15 to 30 minutes each day reviewing the teaching.
- After 3 weeks the learners were given a post- assessment.

1.  $3 \times 5 =$   
 $7 =$

2.  $7 \times 7 =$

3.  $45 \div 9 =$

4.  $28 \div$

5.  $4^2$

6.  $5^3$

7.  $\sqrt{81}$

8.  $\sqrt{25}$

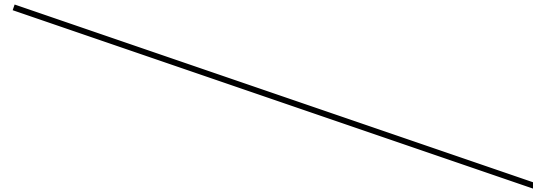
9. Round to the nearest hundredth;

a.  $3.486$  \_\_\_\_\_

b.  $24.9526$  \_\_\_\_\_

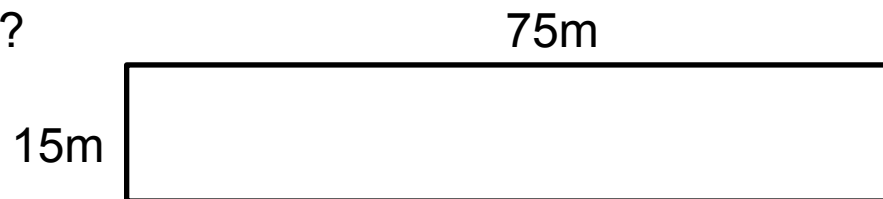
c.  $7.2891$

10. Measure these lines;

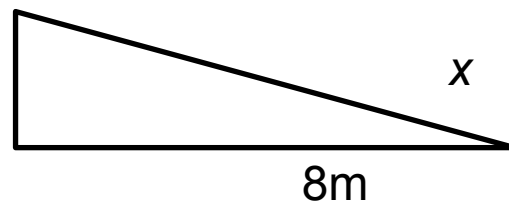


11. How many 200mm measures in 4m? \_\_\_\_\_

12. What is the floor area?



13. Find length 'x'



## The end results

- Number of students re-tested: 6
  - two learner got all the questions correct.
  - one learner got 11 correct.
  - two learners got 9 correct.
  - one learner got less than 5 correct.