



Subject: Mathematics	Grade: Four (4)	Strand: Measurement	Duration: 60 Minutes
Topic: Time	Focus Question: What units should I use to measure the things in my environment?		
Standard	Use the correct units, tools and attributes to estimate, compare and carry out the processes of measurement to given degree of accuracy.		
Attainment Targets	Explain and carry out the processes of estimation and measurement, including the selection of appropriately precise units.		
Benchmarks	Read and write time, and know the relationships between units of time.		
Materials	Index cards, working clock		

Specific Objectives

- *By the end of the lesson, students will be able to:*
 - Make inferences about the time, given the hour or minute hand on an analogue clock
 - Estimate time using an analogue clock

Prior Learning:

- *Students should already be able to:*
 - Associate units of measurement and instruments to appropriate items.

Content Summary

- An hour has 60 minutes. As the minute hand goes around the clock, the hour hand slowly and gradually moves from one hour to the next;
- At half past the hour, the minute hand is on 6 and the hour hand is half way between two numbers;
- When the minute hand is close to 12 (such as when it is on 11), the hour hand will be close to the upcoming hour
- If the minute hand has just past 12, then the hour hand is close to the hour that has just past

Engage

- On different index cards, write pairs of matching times in different formats (for example on one card write '9:15' and on another card write 'quarter past 9' or draw an analogue clock showing 9:15). Distribute cards to students in the class and allow them to find the person with their matching pair.

Explore

- Use a working clock to explore how the hour hand changes when the minute hand goes completely around the clock face. For example, start with 3 o' clock and investigate the position of the hour hand when the minute hand is on 1, 6, 9, 11, etc.
- In order to ensure that students understand the movement of the hands on the clock, set the time to 4 o' clock and ask students questions such as:
 - Where could the minute hand be if the hour hand is close to 5?
 - Where would the minute hand be if the hour hand is close to 4?



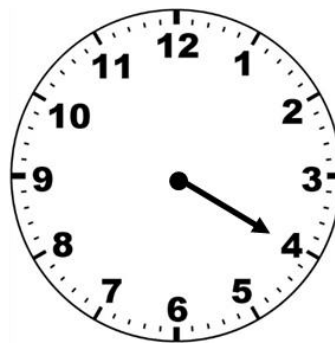
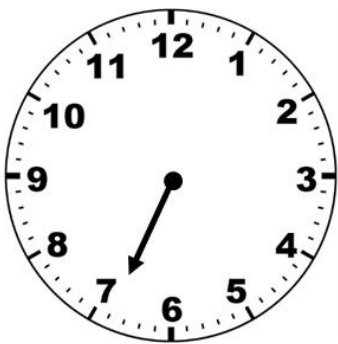
- At what number is the minute hand pointing if the hour hand is half way between 4 and 5?
- Show students a one-handed clock showing the hour hand alone. Discuss where the minute hand is likely to be.



This clock shows an hour hand between 1 and 2.

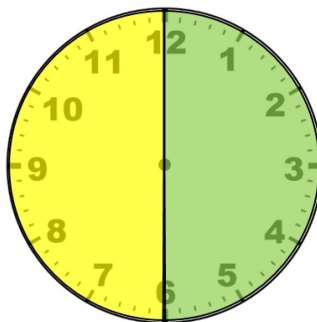
- What hour has just passed? What hour is coming next?
- Do you think that 1 o' clock was a long time ago or a short while ago?
- What time do you think it is now?
- About where is the minute hand?

- Explore similar problems as a whole class:



Explain

- Discuss the idea of the hour hand moving from one hour to another. Students will answer questions such as:
 - How many minutes does it take for the hour hand to move from one hour to another?
 - In what region of the clock is the minute hand when the hour hand is closer to the hour that it is **moving from**?
 - What region is the minute hand in when the hour hand is closer to the hour that it is **moving to**?





Extension

- Introduce students to the idea of 'past the hour' and 'to the hour' and associate this language with the location of the hour hand and the minute between two hours.

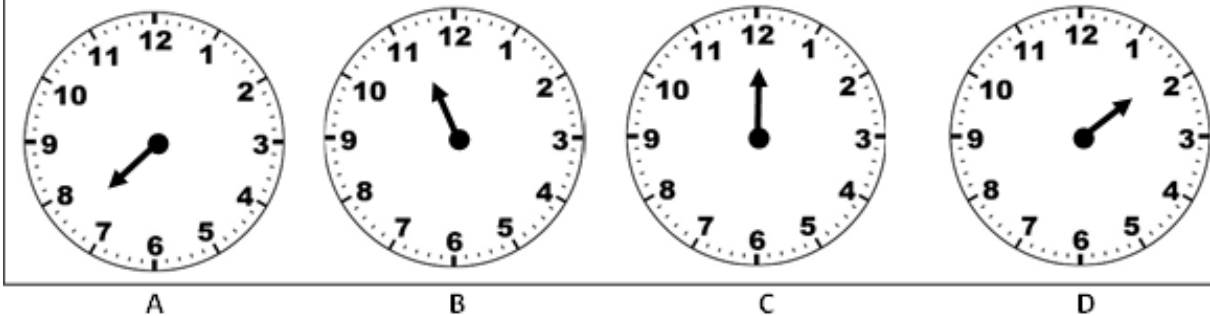
Evaluation

Students' Evaluation

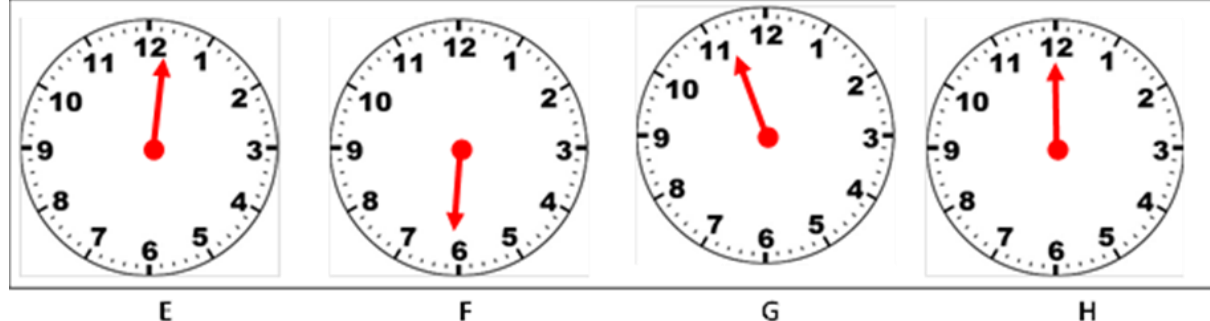
Place students in groups and allow each group to complete this worksheet

- The clocks in set A have hour hands only. The clocks in set B have minute hands only.
 - Which clocks go together? What time does each 'combined' clock say?

Set A – Each of these clocks shows the HOUR hand alone



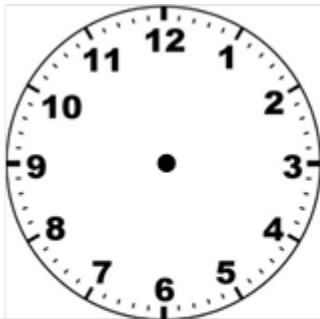
Set B – Each of these clocks shows the MINUTE hand alone



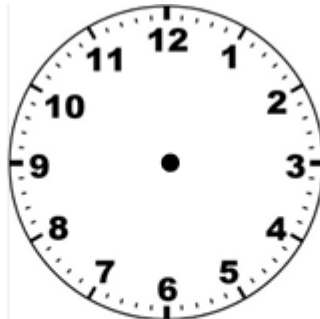
- Which clocks form a pair? What time does each pair tell?



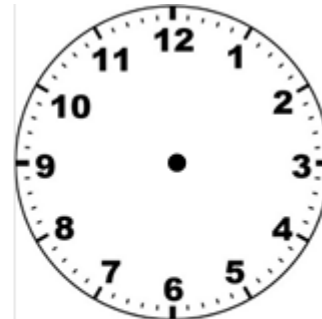
2. On each clock face below, draw the location of the **hour hand alone** to show the time given



Show: 'a few minutes
after 8 o' clock'



Show: 'almost 9 o'
clock'



Show: 'almost 2:30'

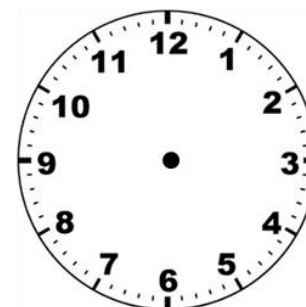
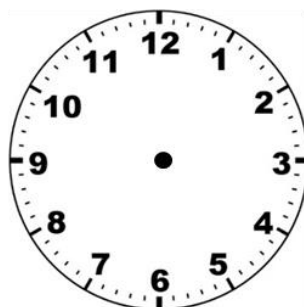
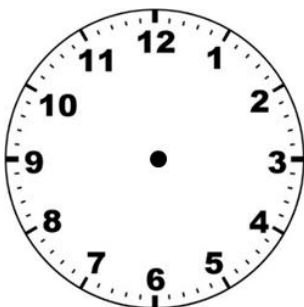
3. The location of some hour hands for 3 different clocks is given in set A and the location of some minute hands for those 3 clocks is given in set B. Which hands go together? Draw them on the clocks.

Set A – Location of the hour hand

- Halfway between 8 and 9
- Between 3 and 4 but very close to 4
- Between 9 and 10 but very close to 9.

Set B – Location of the minute hand

- Pointing on 11
- Pointing on 2
- Pointing on the 6





Teacher Evaluation

<i>What percentage of students able to:</i>	0% - 50%	51% - 80%	81% - 100%
Estimate the answers to addition and subtraction problems involving 2 digit numbers			
Determine the reasonableness of computed or estimated answers			

Comments:

Areas of strengths

Areas of weaknesses

Actions to be taken