

Learning Plan: Y9 SSM1

lesson 4

Learning Tools

- *Diagram for True/ False activity*
- *True/ False cards*
- *Collective memory diagram*
- *large sheets of paper, pencils, colours*
- *Angle chase sheets*

New Curriculum Opportunities

- *Pupils work collaboratively and engage in mathematical talk*
- *Key mathematical processes*

PLTS

- *Team workers*
- *Reflective learners*
- *Independent enquirers*

Objectives

- *Solve problems using properties of angles, of parallel and intersecting lines, and of triangles and other polygons, justifying inferences and explaining reasoning with diagrams and text.*
- *Distinguish between conventions, definitions and derived properties*

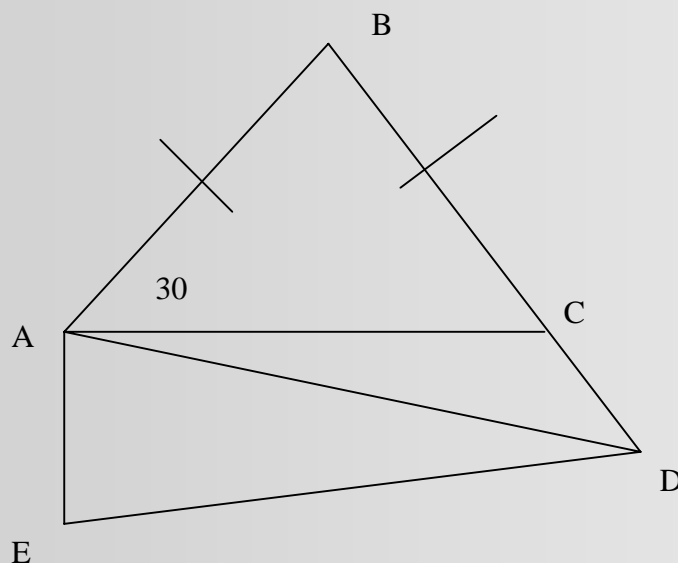
Possible Homework: Pupils make up two questions with answers based on parallel lines and angles

Starter Phase



Discuss difference between convention and definition in maths. Show convention for labelling angles.

True/ false questions based on diagram below. Pupils show their answer and justify by questioning.



Angle BAC is 30 degrees T/F?

Angle BCA is 30 degrees T/F?

Angle DCA is 110 degrees T/F?

The Activate Phase



COLLECTIVE MEMORY ACTIVITY

Pupils work in small teams to recreate angles diagrams.

Helps pupils to process and 'decode' visual information. Lively way to encourage them to devise strategies to help commit to memory.

Requires planning and debriefing to maximise learning outcomes.

A picture of angle diagrams [See Appendix- Y9 SH SP and M 1 Collective memory angles](#). This will be at hidden from view at the front of the room. In groups of 3 (to be decided by teacher) the pupils will first of all have 2 minutes to discuss their strategies, one pupil from each group will then be allowed to see the image for 15 seconds, they will then have one minute back with their group to draw what they have seen and discuss their next move. The second pupil will then have 15 seconds and one minute back at group then the third pupil will do the same. The process will be repeated up to 3 times per pupil. Their pictures will then be compared with the original.

Pupils need to look carefully at parts of the picture and devise strategies to help commit them to memory. Unless they work together, plan and do it together the group will not succeed. At the end of each activity they need time to talk about their thinking and about the mathematical content. See Teacher prompt sheet [Thinking Skills- Collective Memory Teacher Prompt sheet](#)

The Demonstrate Phase



Angle chase - parallel lines

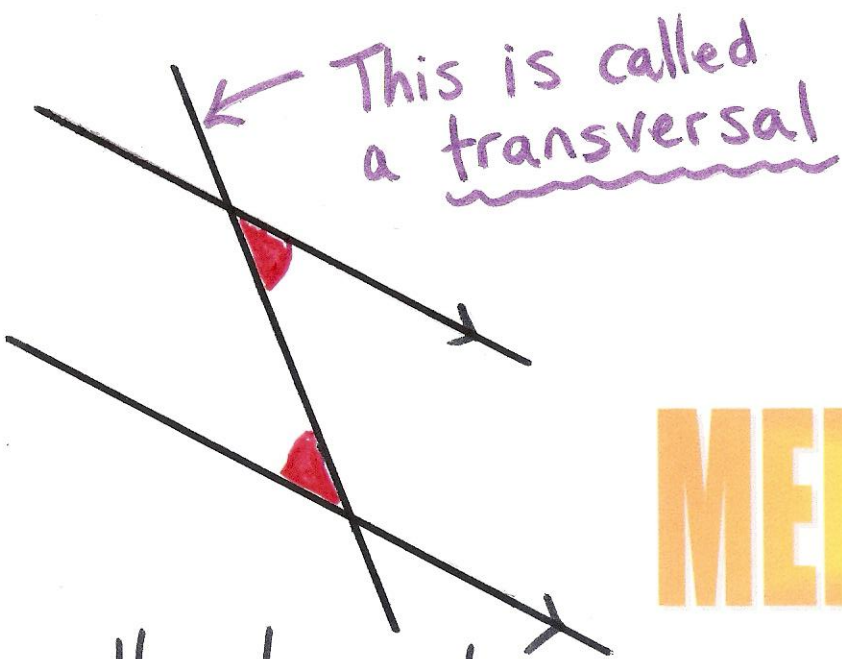
See [Appendix - Y9 SH SP and M 1 Angle chase - parallel lines](#)

The Plenary Phase

Feelings over unit so far and this section on parallel lines and angles, what do they think of different activities

Possibly use pupil review sheet

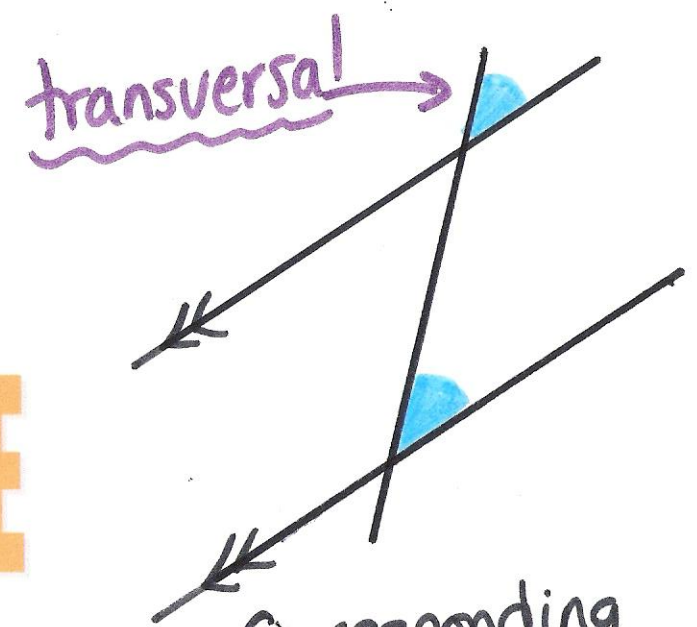
COMMENT SHEETS\Y9 SSM1 Pupil Sheet - Collective memory



This is called a transversal

alternate angles are equal

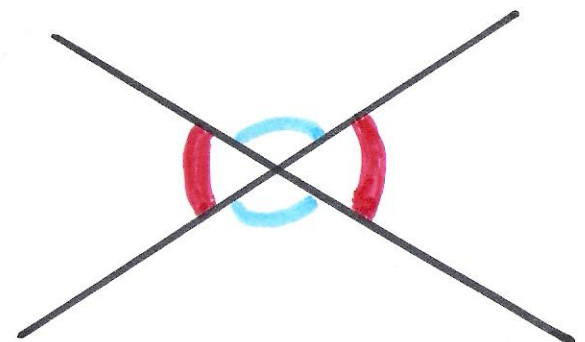
MEMORY GAME



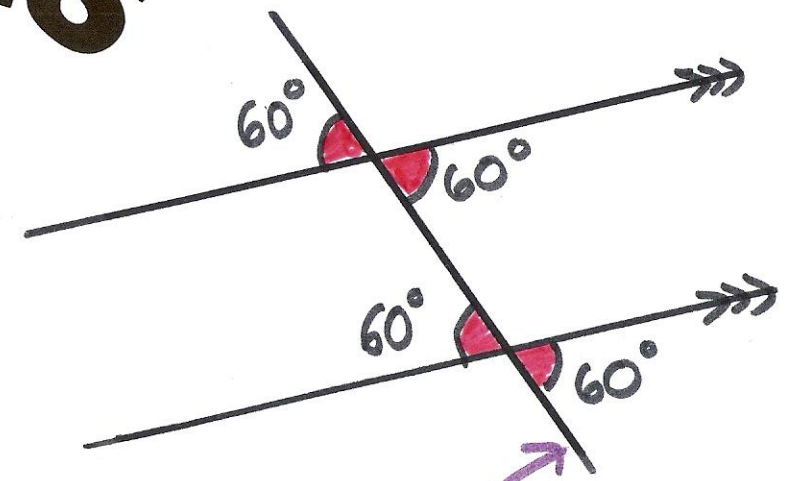
transversal

Corresponding angles are equal

ANGLES



Vertically opposite angles are equal



transversal

THINKING SKILLS LESSON

TEACHER PROMPT SHEET

NAME:
TEACHER

ACTIVITY:
COLLECTIVE MEMORY

START

Teacher referred to thinking skills focus and what is involved in task

The main thinking skill addressed is INFORMATION PROCESSING, focuses on locating and collecting relevant information, will also EVALUATE others' work and ideas and may give REASONS for their actions.

Give groups 2 mins to discuss strategies, one pupil from each group will then be allowed to see the image for 15 seconds, they will then have one minute back with their group to draw what they have seen and discuss their next move. The second pupil will then have 15 seconds and one minute back at group then the third pupil will do the same. The process will be repeated up to 3 times per pupil. Their pictures will then be compared with the original.

Teacher bridges to other subjects, contexts etc

Better in exams, revision techniques, reproduce graphs, diagrams, conventions in maths, getting overview of something before going into detail, jigsaw picture together

Teacher refers to learning behaviours, collaborative working, sharing ideas etc.

Remind them of importance of working together and supporting each other, waiting turn to speak, cooperating with others and sometimes compromising.

Teacher leaves task open

PLENARY

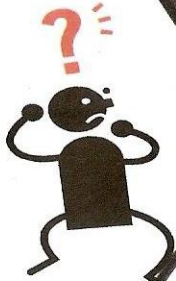
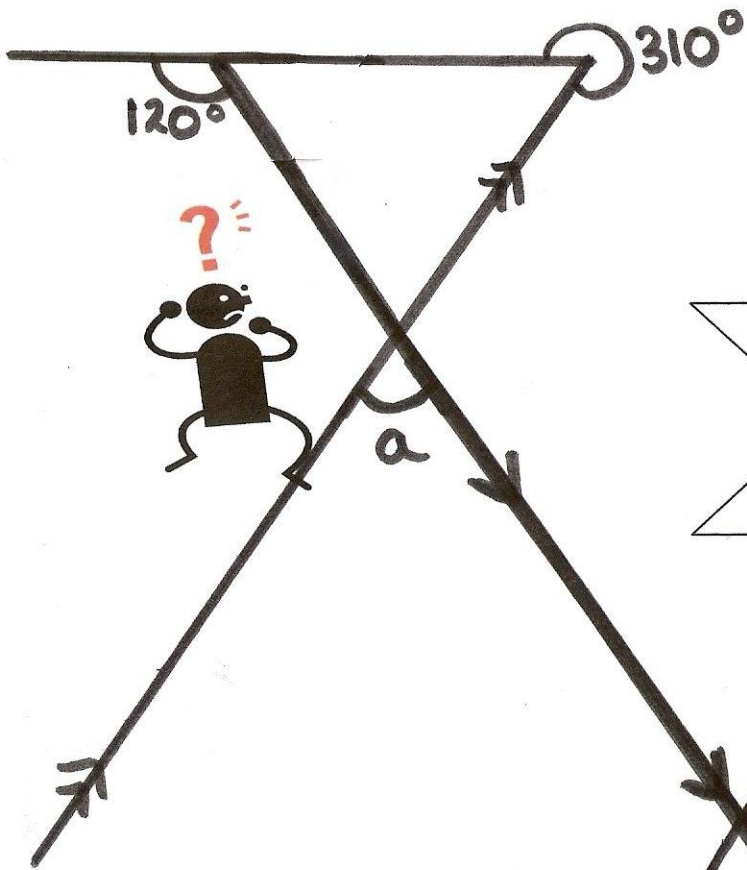
Teacher uses planned questions to draw out pupils thinking: reasoning (why), reflection (how), challenge (have you thought of...), application (where else?)

Write few questions and give groups few minutes to formulate their answers, with support from other adults if necessary.

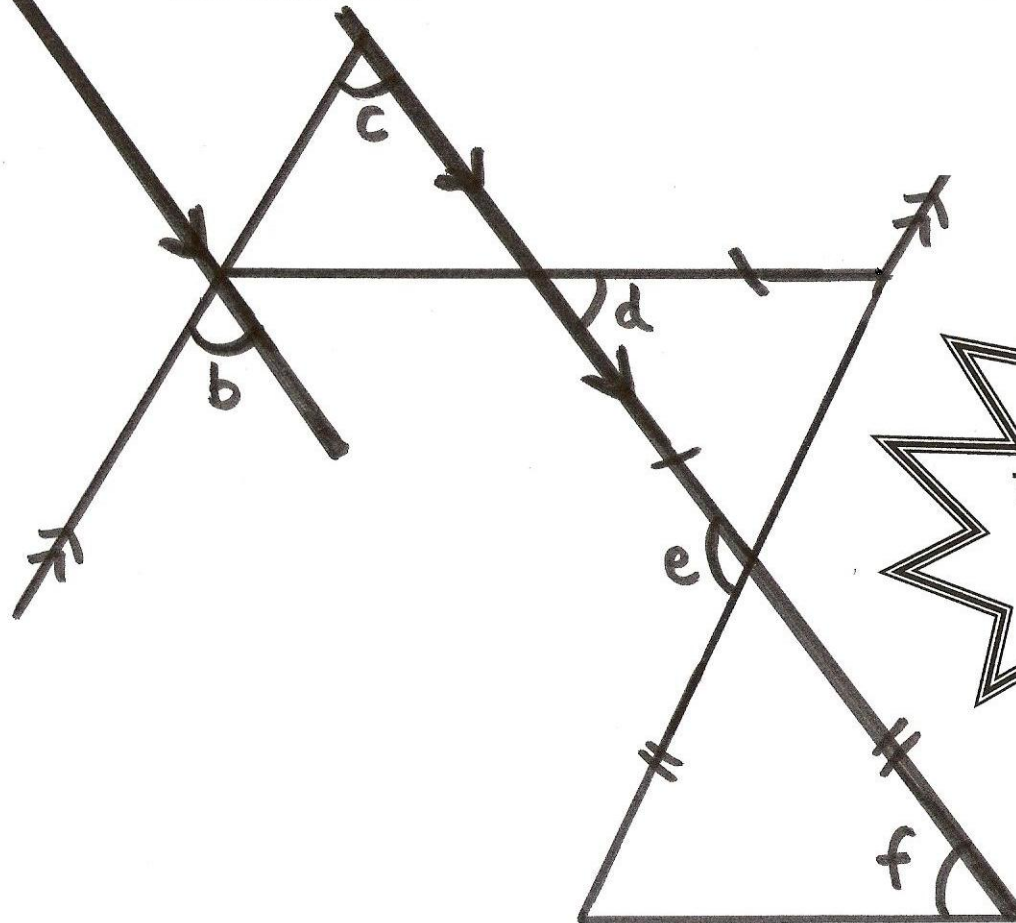
- How did you do the task?*
- How did you work together?*
- What did first person do- was this different from the second two people?*
- Did your original plan work or did you have to change it?*
- What was hard about the 10 seconds?*

After doing it again

- How did this time compare with the other time?*
- What have you learned about thinking and how have you improved?*



Angle chase



How can you find the angles?
They are not drawn to scale
so you can't measure them!!!