

# PCMI 2009 Reflecting on Teaching Day 2 Australia Transcript

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## Teacher monitors a group of three students working on the group task.

00:24:03 SN Miss what should we do now?

00:24:04 T Pardon?

00:24:04 S What should we do now?

00:24:05 T Have you done all of them have you?

00:24:05 S Yep.

00:24:06 SN Yeah.

00:24:07 T Well, did you end up working out how many instructions you actually needed for each one?

00:24:12 SN Yep, I needed four.

00:24:15 T You needed four, what were they?

00:24:16 S Um, interval A B is vertical and measures five centimeters. Interval A C is horizontal (inaudible).

00:24:25 T So if it's saying horizontal it's saying it's at an angle aren't you?

00:24:31 S Yeah.

00:24:31 T So we're saying one's vertical and one's horizontal.

00:24:33 S Yeah and you um...

00:24:34 T Then you're defining the angle between them aren't you?

00:24:36 S Mm, I'm saying it's a right angle.

00:24:38 T Yes.

00:24:39 S Because interval- interval A B C is a right angle.

00:24:44 T Right, so did they need all those instructions to finish your triangle?

00:24:47 S Yes.

00:24:48 T Yes.

00:24:49 S Draw an arc from angle, uh, angle C joining to the B C which is the hypotenuse and draw a dot in any (inaudible).

00:24:56 T All right, so you started with a line that was vertical.

00:24:58 S Yep.

00:24:58 T And then a line that was horizontal of a certain length.

00:25:00 S Yep.

00:25:00 T And then you joined them.

00:25:03 S Yes.

00:25:04 T So what did you-

00:25:05 S And it was a right angle.

00:25:07 T Yes, and the right angle so you had two sides and a right angle and then joined them.

00:25:10 S Yeah, and then-

00:25:11 S The arc on- the arc on angle C and then join the interval-

00:25:11 T And then joined them.

00:25:15 T Did you- what was the arc on angle C? Show me. Right, did you actually have to have- so did you tell them what length that was?

00:25:24 S No. I just said join it.

00:25:25 T No, you didn't have to.

00:25:26 S Which is the hypotenuse.

00:25:26 T Join it, yes. Yes, so you only needed two sides and the right angle.

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[00:25:30](#) S Yep.

[00:25:31](#) T Okay. What did you need?

[00:25:33](#) SN Three.

[00:25:34](#) T And what was it?

[00:25:35](#) SN Okay, I took my set square and drew a straight line nine centimeters for the base. Um, number two, I then made 90 degrees set square-

[00:25:42](#) T Pardon? It's, well how long was the base, did you say?

[00:25:46](#) S Um, nine centimeters.

[00:25:47](#) T Right. Yes. And so you drew a right angle as well?

[00:25:50](#) S Yeah.

[00:25:51](#) T Yes.

[00:25:52](#) S Um, number two, I then made 90 degrees set square- along the line, the end on the corner, and drew a straight line up six point two centimeters.

[00:26:01](#) T Yes.

[00:26:02](#) S Number three I then joined the- both ends up with the right angle triangle-

[00:26:07](#) T So you had the same thing, you had a right angle and two sides.

[00:26:10](#) S Yeah. And the degrees were 90 degrees so-

[00:26:11](#) T Right.

[00:26:12](#) T Did you have anything different?

[00:26:14](#) SN Nope.

[00:26:14](#) T You had the same thing.

[00:26:15](#) SN Almost.

[00:26:16](#) T You all did right angles.

[00:26:17](#) SN Yep.

[00:26:22](#) T So no imagination.

[00:26:23](#) SN Nope.

[00:26:26](#) T [laughs] All right. So that's one of the- think and see if you can think of the same triangle if you could've given different instructions to have done the same triangle.

[00:26:38](#) SN Yep.

[00:26:43](#) T See if you can all end up with different ideas.

[00:26:46](#) SN Okay.

### Teacher moves to a second group

[00:26:53](#) T So how did you end up?

[00:26:54](#) SN Good.

[00:26:54](#) SN Good. We all won.

[00:26:55](#) SN We have to check them.

[00:26:56](#) SN I won.

[00:26:57](#) SN No we all won.

[00:26:59](#) T Yeah, were- were they all different?

[00:27:00](#) S No, they're all the same.

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00:27:01 T They're all the same. So what was the same? What did you end up having to write?

00:27:05 SN Construct a right angle-

00:27:07 T What did you end up having to draw?

00:27:09 S Oh.

00:27:09 SN Triangles.

00:27:10 T Yeah.

00:27:11 S Congruent triangles, they're all congruent.

00:27:13 T Yes, but what were the instructions?

00:27:15 S Um, I couldn't- um... Draw an eight-centimeter line.

00:27:19 T Yes.

00:27:21 S Um, make a radius of five centimeters.

00:27:23 T Mm hm. Yeah.

00:27:26 SN She did not say that.

00:27:27 T Yeah, that's all right.

00:27:27 SN Um, place the point of the compass at the right end of the line and draw a circle.

00:27:32 T Yes. Of what size?

00:27:34 S Pardon?

00:27:35 T Yeah.

00:27:35 S Um, with a five centimeter radius.

00:27:36 T Yeah.

00:27:37 S Um, uh- and make a... where am I? Oh, make a seven-centimeter radius and draw a circle from the left end of the line.

00:27:46 T Yes

00:27:46 S And join where the point-

00:27:48 T So what did you end up doing?

00:27:50 SN The edited version.

00:27:52 T Was it all the sides, all the angles, a combination?

00:27:55 SN Pardon?

00:27:56 T What did you end up with?

00:27:57 S All the same sides and angles.

00:27:59 T All the sides, yeah. Yep you end up with all the same angles but what did you tell them to draw, sides or angles?

00:28:03 S Um, sides.

00:28:04 T All sides.

00:28:05 S Yeah.

00:28:05 T Did you draw all sides?

00:28:06 SN Um, I said an angle of 60 degrees and then but- and then two lines.

00:28:13 T Which lines?

00:28:14 S The beginning line.

00:28:15 T Yes.

00:28:15 S Was A B 10 centimeters long.

00:28:16 T Yes.

00:28:17 S And then an angle of 60 degrees at A.

00:28:19 T Yes.

00:28:20 S And draw a line six centimeters long.

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[00:28:21](#) T From where?

[00:28:22](#) S From A.

[00:28:22](#) T From A, yep. So you've got two lines and an angle.

[00:28:26](#) S Yes.

[00:28:26](#) T Righty-o. And what did you end up with Tanya?

[00:28:28](#) SN Uh...

[00:28:29](#) T Yours were all lines as well?

[00:28:30](#) S Yes. Draw an eight-centimeter interval.

[00:28:33](#) T Right.

[00:28:33](#) S Make a radius of five centimeters, draw an arc, make a radius of six. Draw an arc from H bisecting arc from X to form point N.

[00:28:41](#) T Bisect- oh, you mean intersecting.

[00:28:43](#) SN Oh, crumbs.

[00:28:44](#) T Yeah. [laughs] So you'd end up with three sides.

[00:28:48](#) S No, no yes, it was-

[00:28:49](#) T Yeah, righty-o.

[00:28:50](#) SN What's the difference between bisect and...?

[00:28:53](#) T Bisecting means to cut it in half.

[00:28:54](#) SN Half, yeah. Bi- bi.

[00:28:55](#) SN But it did bisect it.

[00:28:57](#) SN It cut it in half.

[00:28:58](#) T It depends on how long the line is.

[00:29:00](#) SN It was half a line.

[00:29:02](#) T [laughs] Yes Louise.

[00:29:04](#) SN How many times do you have to go through them?

[00:29:06](#) T Just once. You have to do one each. Are you finished?

[00:29:08](#) SN Is that all?

[00:29:09](#) T Yes.

[00:29:09](#) S She's just go to do hers.

[00:29:11](#) T Righty-o.

[00:29:13](#) SN We did all ours and they all figured it out.

[00:29:15](#) T Yes.

[00:29:15](#) S Um... with Louise's, we did-

[00:29:21](#) T When you cut them out you usually cut them out to see if they fit?

[00:29:25](#) S Yeah, but

[00:29:25](#) S but they- the angles were all the same. We measured the angles and all that.

[00:29:25](#) T Yeah

[00:29:26](#) T Yeah, that's all right. Yes. Righty-o.

[00:29:28](#) S Um, with Louise's, she didn't give us any angles.

[00:29:32](#) T Yeah, that's okay.

[00:29:33](#) S But with um mine I gave the angles, is that- is that all right?

[00:29:37](#) T So which angles do you- which angles did you give?

[00:29:40](#) S I gave a five centimeter line and then a right angle with another five centimeter line.

[00:29:42](#) T Yes.

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[00:29:44](#) T Right, okay. And did you do anything different Nerida?

[00:29:47](#) SN Yes, and Nerida's is good.

[00:29:48](#) SN I like Nerida's. Oh, sorry.

[00:29:49](#) T Yeah, so what did you start with?

[00:29:50](#) SN Um-

[00:29:51](#) S I started with a six centimeter line going horizontally.

[00:29:54](#) T Yes.

[00:29:55](#) S And then found halfway three centimeters and put a dot.

[00:30:00](#) S You put the center point of a protractor on the dot.

[00:30:03](#) T Yes.

[00:30:03](#) S And then you uh find 70 degrees.

[00:30:06](#) T Yes.

[00:30:07](#) S And you draw a line then put a dot. Then you connect um the top point to the bottom right point of the six-centimeter line.

[00:30:15](#) T Right. Yeah.

[00:30:16](#) SN And Nerida's- see how she has (inaudible) like that.

[00:30:18](#) T Yes. Yes.

[00:30:19](#) SN And then you- you put the pencil on the top dot again, and draw it to the (inaudible) left hand side.

[00:30:26](#) T Well that was very different.