Sarah Tedford

Math Investigation

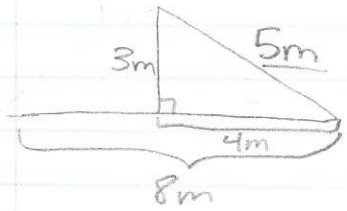
Feb. 12th

1. Why did Small Number think the posts were 5m long each?

Pythagoren theorem

$a^2 + b^2 = c^2$

His grandfather thinks 8m across
Grandfather said ~3m tall



$4^2 + 3^2 = c^2$

$16 + 9 = 25 \quad \sqrt{25} = 5m$

- quick calculation? good @ math?
- good @ eyeing and estimating?

Problem Solving Strategies

- could recognize / make a triangle with the poles
- maybe looks like the posts are something he knows is 5m ↳ totem poles?

- existing knowledge - maybe Small Number is comparing the posts to something he already knows measurements of
  ↳ his own height? ↳ family heights?
  ↳ trees? ↳ his house? ↳ a meter stick?

- draw diagram / make model
  ↳ would work but I don't think Small Number used this - he fell in the pit house → didn't have the resources

- guess and check - guess @ measurements of 8m and 3m, guessed and check 5m w/ pythagoren theorem

* problem solving strategies all use estimation
  ↳ since proper / exact measurement were not done and could not be done, Small Number likely used estimation

2. How did the ancestors know how many posts?

- they have been building Pit Houses for a long time
  ↳ lots of experience building them
    • connection / knowledge with nature - know how to build and with which materials
- would have used guess and check / trial and error to figure it out @ first
  ↳ once they figured it out, they knew what worked and continued with it
  ↳ estimation of measurements for the height/length and how much weight materials could hold and would need to hold

- knowledge from tents and tipis taught / shows that they need more than 2 support poles to hold shelter up
  ↳ at least 3 to hold it open

↳ the more poles, the more support

- to figure out how many posts, they could have tried something with patterns
  ↳ using patterns from materials or measurements

- maybe Small Numbers grandfather said "our ancestors had their ways" because he is not sure how they first figured it out