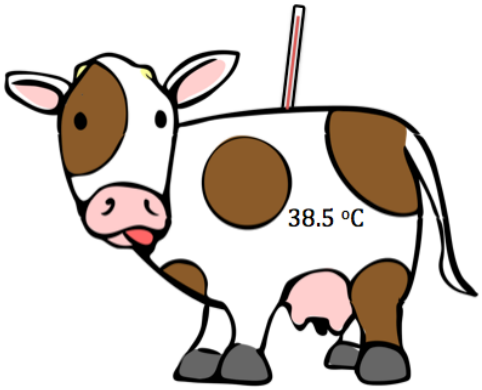
Topic	Precise, Accurate, Repeatable and Reproducible	**Level**	GCSE (or any course for students aged 11-16)
Outcomes	To explain the difference between precise and accurate To explain the difference between repeatable and reproducible.		

Has Daisy got a temperature?

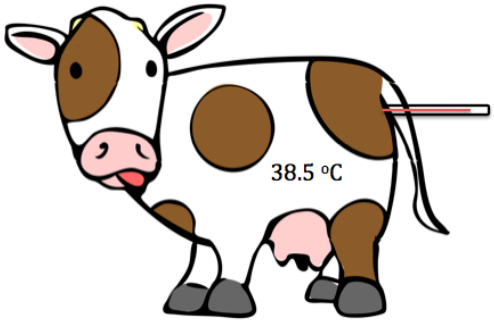
Farmer Nick had a beautiful cow called Daisy. One day Daisy felt rather hot. He wanted to measure Daisy's temperature. He put a thermometer onto Daisy's skin and recorded the temperature. He repeated his measurement three more times using the same thermometer and recorded the temperatures below:



Reading number	Temperature (°C)
1	35
2	37
3	36
4	36
Mean	36

1. **Was Nick accurate? Use the picture of Daisy to explain your answer.**

Farmer Jim's daughter, Amy, decided that a better way to take the temperature was to use a rectal thermometer.



Reading number	Temperature (°C) measured by Amy
1	42.0
2	37.0
3	39.0
4	36.0
Mean	38.5

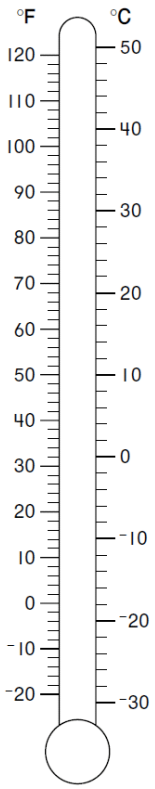
2. **Was Amy accurate? Use the picture of Daisy to explain your answer.**

Here are the reading made by both farmer Nick and Amy.

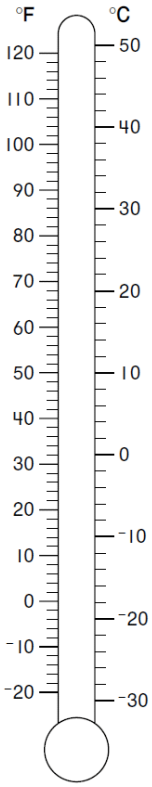
Reading number	Temperature (°C) measured by Nick	Temperature (°C) measured by Amy
1	35	42.0
2	37	37.0
3	36	39.0
4	36	36.0
Mean	*36*	*38.5*

Mark onto the thermometers the temperatures recorded by Nick and Amy.

Farmer Nick's readings



Amy's readings



3. **Use the thermometers above to explain who collected the most precise results.**

4. **Did Nick and Amy get reproducible results? Explain your answer.**

5. **Did Nick or Amy get repeatable results? Explain your answer.**

Progress: further resources on working scientifically are available here: http://thescienceteacher.co.uk/how-science-works/