NAME: Mrs. Sjuts | **DATE:** Tues, Aug 24, 2021

TOPIC: Recording the COMPLETE measurement

ESSENTIAL QUESTION: What are the 3 parts to a measurement and how do you find & record all 3?

QUESTIONS AND CONNECTIONS:

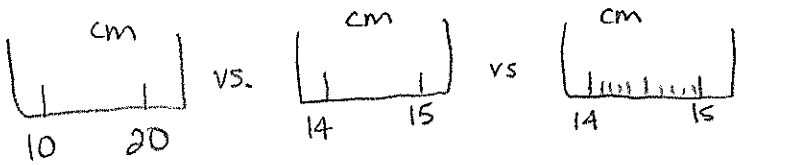
What is the diff between 21 and 21.00?

NOTES: Slides 15-27?

① Measurement
- a. Write what you know
- b. include d of (estimate)

② Uncertainty (Random Error)
- a. Half sm. division on scale
- b. Determined by measurement device

③. Units
- a. Use metric unless otherwise instructed
- b. common units: meter, Liter, gram, Kg, Kelvin, second



14 ± 5 cm $14.5 \pm .5$ cm $14.58 \pm .05$ cm

How do you count and calculate w/sf... and who cares?! Why do we do it?

Wed, Aug 25, 2021

QUESTIONS AND CONNECTIONS:

What are sf?

What do they tell us?

Why do we use them?

How do I count them? ←

How do I calc w/ them? ←

NOTES: Slides 28-30

SigFigs: know digits in measurement

Reflects the precision of measurement tool.

What is the diff between 1100 and 1100.0?

How to count sf? ←

- Non-zero digits & sandwiched zeros = YES!
- Leading zeros = NO, NEVER!
- Trailing zeros → Yes IF they follow a non-zero digit & a decimal
- Sci notation = all! 3.25×10^4 J

* counting? ∞ infinite
EX: 8 stud. in class ⇒ ∞

Alt. Method

decimal → present * Pacific - from L, Stop at first non-zero digit. All others are sig.

→ absent * Altantic - from R, stop at first non-zero digit. All others are sig.

How to calc. w/ sf? ←

× & ÷ → det. by fewest s.f.

EX: 3.35 × 4.669 = 15.571115

SUMMARY:

15.6 mL

+ & − det. by least precise # - can't have an answer more precise than what you started with

EX: 64.25 cm
5.333 cm
69.583 cm → 69.58 cm