

**For each page ...
either do front or write 1 of your own on back!**

1. *How many picometers are in an AU (astronomical unit - or distance to Sun)? [Ben Algava]*

Given:

Estimate: # pm / 1 AU

- 10^{12} picometers / 1 meter
- 93 million miles / 1 AU
- 1,000 meters / kilometer
- 1.6 kilometers / 1 mile

2. *How many seconds are in a leap-year! [Ben Algava]*

Given:

Estimate: # secs / 1 leap-year

- 1 minute / 60 seconds
- 1 leap-year / 366 days
- 1 hour / 60 minutes
- 1 day / 24 hours

3. *If bacteria cells were lined up next to each other in a line that stretched across the entire universe, how many would it take? [Ben Algava]*

Given:

Estimate: # cells / universe

- 1 meter / 10 million micrometers
- 2.54 centimeters / 1 inch
- 1 foot / 12 inches
- 5,280 feet / 1 mile
- 156 billion light-years / 1 universe
- 0.8 micrometers / 1 cell
- 1 light-year / 6 trillion miles
- 1 meter / 100 centimeters

4. *Counting the leaves in the park! [Eric Lopez]*

Given:

- 1000 branches per tree
- 10 leaves per twig
- 60,000 trees per park
- 20 twigs per branch

Estimate: # leaves / park

5. *Counting the lady bugs that feed on bamboo each year! [Eric Lopez]*

Given:

- 6 shafts per stem
- 1 lady bug per leaf
- 3,000 stems per year
- 12 leaves per shaft

Estimate: # lady bugs / year

6. *How many inches are in a kilometer? [Beth Cullen]*

Given:

- 3 feet per meter
- 1,000 meters per kilometer
- 12 inches per foot

Estimate: # inches / kilometer