

Name: \_\_\_\_\_ Hour: \_\_\_\_\_ Date: \_\_\_\_\_



## Can you taste the rainbow?



Many students claim that they can taste the different colors of Skittles. Today we will conduct an experiment and perform a significance test to see if students really can “taste the rainbow”.

**Collect data:** How many correct? \_\_\_\_\_ How many total? \_\_\_\_\_

**STATE:** Parameter:

Statistic:

Hypotheses:

Significance level: 5% ( $\alpha = 0.05$ )

**PLAN:** Name of procedure:

Check conditions:

**DO:** General Formula:

Specific Formula:

Work:

Picture (of the Normal curve):

Test statistic:

P-value:

**CONCLUDE:** Based on the P-value, what conclusion do you make?

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## Significance Tests: The 4 Step Process

Important ideas:

### Check Your Understanding

1. Sometimes parents and grandparents like to recount how difficult life was when they were kids, such as having to walk 10+ miles to school (in the snow, uphill both ways). A random sample of 180 teenagers were selected and 40% had heard stories from their parents or grandparents about how difficult life was when they were kids. Do these data provide convincing evidence at the  $\alpha = 0.05$  significance level that the proportion of all teenagers who have heard stories from their parents or grandparents about how difficult life was when they were kids differs from 0.50?

**STATE:** Parameter:

Statistic:

Hypotheses:

Significance level:

**PLAN:** Name of procedure:

Check conditions:

**DO:** General Formula:

Specific Formula:

Picture:

Work:

Test statistic:

*P*-value:

**CONCLUDE:**

2. A 95% confidence interval for the proportion of all teenagers who have heard stories from their parents or grandparents about how difficult life was when they were kids is (0.328, 0.472). Explain how the confidence interval is consistent with, but gives more information than, the test.