MISSION 2 · GRADES 6-8 · GAME SHEET

Call It!

Real snow mornings. Your chance. Your Snow Points.

Name _____

Date _____

Call It! Each card is a real Kentucky school morning. **Read** the weather. **Write** the chance of no school, 0 to 100%. **Flip** the card and find your Snow Points below.

SNOW POINTS

You said	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
No school happened	**0**	**19**	**36**	**51**	**64**	**75**	**84**	**91**	**96**	**99**	**100**
School happened	**100**	**99**	**96**	**91**	**84**	**75**	**64**	**51**	**36**	**19**	**0**

Saying 0% or 100% and being wrong scores 0. Over many mornings, saying what you really believe scores best.

Round	Card #	My chance of no school	My Snow Points	Snow Day Radar said	Snow Day Radar's points
1		%		%	
2		%		%	
3		%		%	
4		%		%	
5		%		%	
6		%		%	
7		%		%	
8		%		%	
9		%		%	
10		%		%	
		Totals			

1. Did you beat the Radar? On which card did you win the most points?

2. Did saying 0% or 100% ever cost you? Why is saying what you really think the best plan?

HEADS UP

These cards include extra surprises, so they're harder than a real winter. Over 19,888 real Kentucky mornings, Snow Day Radar averaged **88 Snow Points** a morning. Always saying 50% gets 75.

Cards: real Kentucky mornings, 2010-2023 (KDE records, weather data).
Snow Points: the Brier score, on a 100-point scale

Free from Snow Day Radar

MISSION 2 · GRADES 6-8 · THE SCORECARD

Does 30% Really Mean 30%?

Check a real forecast against 15 winters of real school mornings.

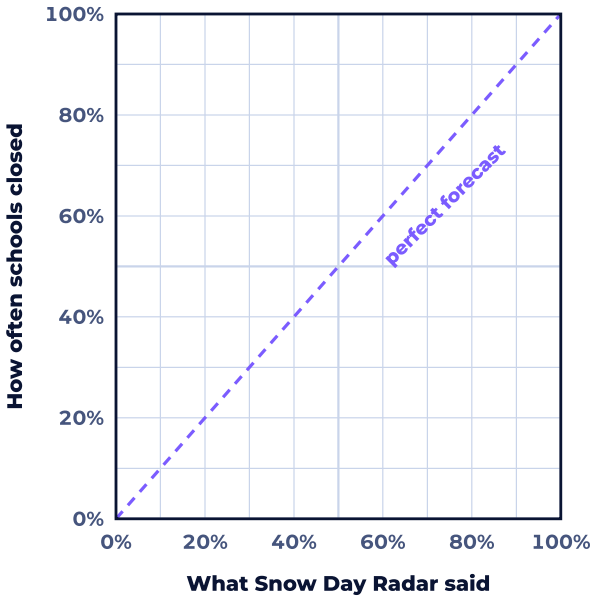
Name _____

Date _____

Does 30% really mean 30%? Snow Day Radar was tested on 15 Kentucky winters. Each winter was hidden, forecast blind, then checked against what schools really did. These are the real results.

Snow Day Radar said	Mornings	No in-person school	Fraction	Percent
20%	1,795	446	0.248	25%
30%	1,219	449		
40%	976	440	0.451	45%
50%	817	463		
60%	827	527	0.637	64%
70%	882	623		
80%	5,835	5,189	0.889	89%

1 **Fill in the empty boxes.** Divide, round to 3 decimal places, then write it as a whole-number percent.



2 **Plot every row:** what it said across, how often schools closed up. A perfect forecast lands on the dashed line.

3 Are most points above or below the line? What does that mean for kids hoping for a snow day?

_____

_____

_____

4 It says 60% on 50 nights this winter. About how many no-school days? Using 60%: _____ Using the track record: _____

Data: Snow Day Radar backtest, 19,888 Kentucky mornings with winter weather in 15 winters between 2009 and 2026

Free from Snow Day Radar

MISSION 2 · GRADES 6-8 · PROBABILITY LAB

Simulate 20 Snow Nights

One night is luck. Many nights are probability.

Name _____

Date _____

Probability lab: the forecast says 30%. Build a model: the digits 0 to 9 are equally likely, so let **0, 1 and 2** mean no school (3 out of 10) and **3 to 9** mean school. Each digit is one night.

Row	Digits (read left to right)
1	17105 62625 92449 15414
2	46832 55367 62755 91305
3	74814 66912 49119 88617
4	33014 98180 91925 70200
5	55848 67736 72743 90749
6	82353 11476 24724 96453
7	98680 37242 26943 45939
8	64443 11346 10702 06934
9	94861 18641 36895 32192
10	56620 20978 53241 37331

1 Your teacher gives you a row. Tally its 20 nights. My row: _____

	Tally	Total
No school (0, 1, 2)		
School (3 to 9)		

2 My row: _____ / 20 = _____

3 Whole class: _____ / _____ = _____

4 Which was closer to 0.3, your row or the class? Why?

_____

_____

BIG IDEA

One night is luck. Many nights show the real probability. Scientists call it long-run relative frequency.

Random digits made by computer for this kit; a 10-sided die or spinner works the same way

MISSION 2 · GRADES 6-8 · CHALLENGE

Bust the Myth

Science or superstition? Design a fair test.

Name _____

Date _____

Bust the myth: kids swear by snow day tricks. Could you test one like a scientist? Pick a myth and design a fair test.

MYTH



Pajamas inside out

MYTH



A spoon under the pillow

MYTH



Ice cubes down the toilet

MYTH



A white crayon in the freezer

1. My myth as a claim: *If I* ____, *then* ____.

2. What would you count, and for how many nights, to test it fairly?

3. What's your comparison group?

4. Your friend wore pajamas inside out 3 times and got 2 snow days. Why isn't that proof?

5. **Circle what really changes the odds** (forecasters watch these):

snow by 7 AM | **ice on the roads** | **pajamas inside out** | **wind chill at bus time** | **a Winter Storm Warning** | **a spoon under the pillow** | **how often your district closes** | **ice cubes down the toilet**