



Teaching *for*  
**TRANSFORMATION**

# Probability Carnival Statistics - 12th Grade

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## Deep Hope:

My deep hope is that my students will feel part of a community that has been invited into God's story to joyfully embrace learning, and recognize God's beauty in mathematical order.



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## Essential Learning Targets:

- 🎯 I can connect and create community with elementary students
- 🎯 I can make learning about math joyful for elementary students



## Curricular Outcomes: Probability - AP Statistics

- How to identify the sample space of a probability experimental and how to identify simple events
- How to use the Fundamental Counting Principle to find the number of ways two or more events can occur
- How to distinguish among classical probability, empirical probability and subjective probability
- How to find the probability of the complement of an event and how to use a tree diagram and the Fundamental Counting Principle to find probabilities
- How to find the probability of an event given that another event has occurred
- How to distinguish between independent and dependent events
- How to use the Multiplication Rule to find the probability of two or more events occurring in sequence and to find conditional probabilities
- How to determine whether two events are mutually exclusive
- How to use the Addition Rule to find the probability of two events
- How to find the number of ways a group of objects can be arranged in order and the number of ways to choose several objects from a group without regard to order
- How to use counting principles to find probabilities



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## Habit(s) of Learning:

Joy filled collaborating- Students collaborated with one another to create their carnival projects and then collaborated with the elementary students during the carnival.





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## See God's Story:

I want my student's to see that all of our interactions with one another are a part of God's story. The carnival will always be a part of the story in their high school math class and the elementary students they engaged with during the carnival will also have that as part of each of their stories. The hope is that the high school math students inspired those elementary students to see math as "fun/joyful."

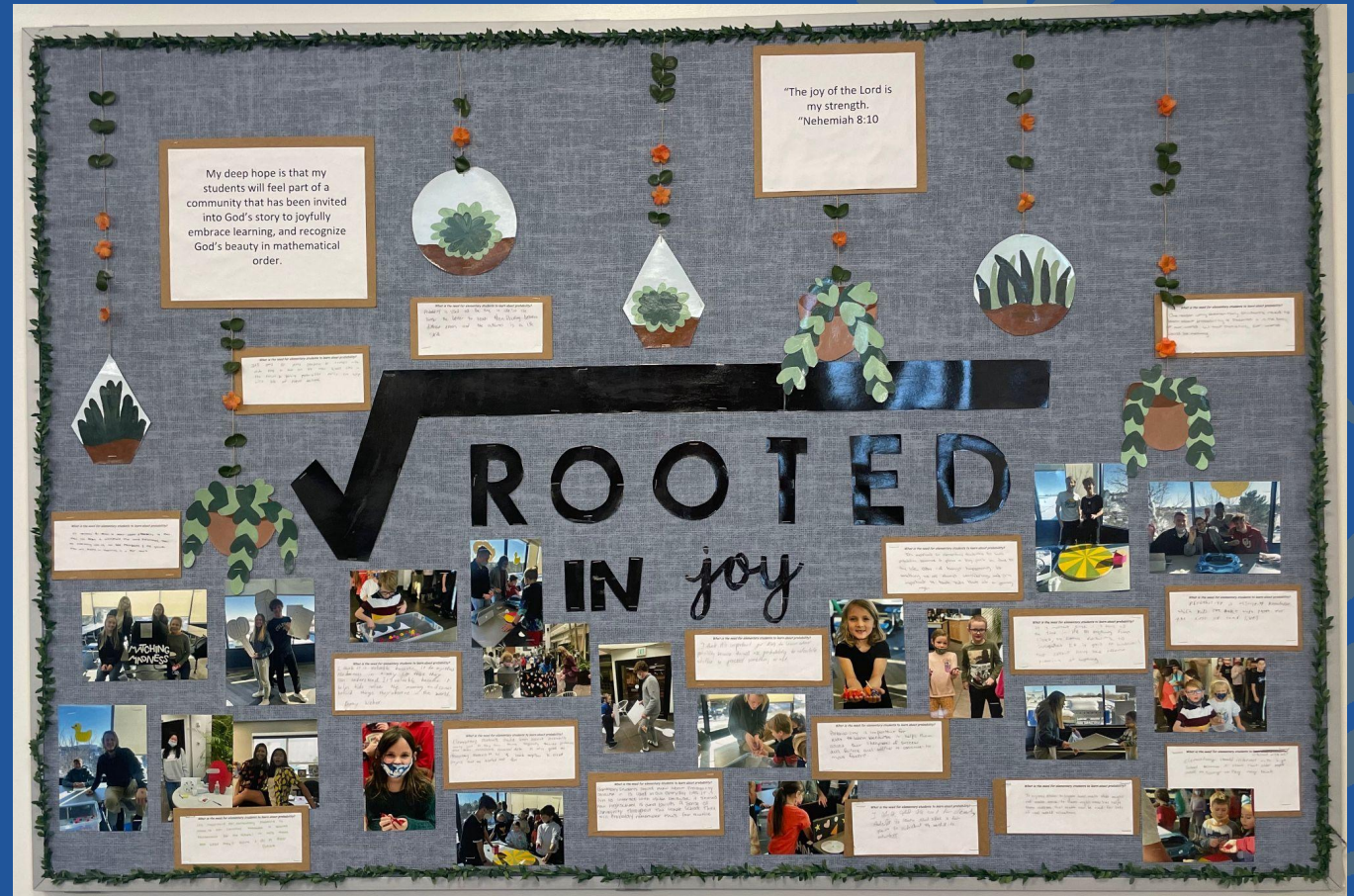




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Storyline:

Rooted in Joy





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## Throughlines:

### Beauty Creator

Students created an engaging and fun carnival game for elementary students to play!

### Community Builder

Students created community with one another and with elementary students. The elementary students saw that they are a part of a bigger school community.





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## Formational Learning Experience:

**Real needs:** A real need is for students to use the probability concepts they learned in class outside of the classroom to create a fun, joy-filled activity for elementary students. This allows for them to make connections with what they are learning in class outside of class and allows elementary students to experience math in a positive way.

**Real people:** The high school seniors and the elementary students at DCHS.

**Real work:** The real work involved teams of students working together to design games and then executing them for elementary students to play.



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## INVITE

I invited my Introduction to Statistics class to create a carnival game for which they were able to figure out the theoretical probability.







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## NURTURE

“The joy of the Lord is  
my strength.”

Nehemiah 8:10





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## EMPOWER

The students held the carnival for elementary students to see how their theoretical probability and expected value compared to their experimental probability and expected value. They were empowered to be able to put on an event that brought joy! Some questions for the students to reflect on were:

What is the real need for statistics?

What is the need for elementary students to learn about probability?

What is the need to connect with elementary students as high school students?







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## Student Reflections:

Elementary students should know about probability because it is used in our everyday lives. It was fun to interact with them because it shows how high school is and builds a sense of community throughout the whole school. They will probably remember this for awhile.





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## Teacher Reflections:

I think that students were able to build a community with each other and the elementary students in the building. I also believe that the activity was fun for everyone involved – the creators and the student participants.



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## Additional Information to tell the story:

- The carnival was shared on DCHS social media





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