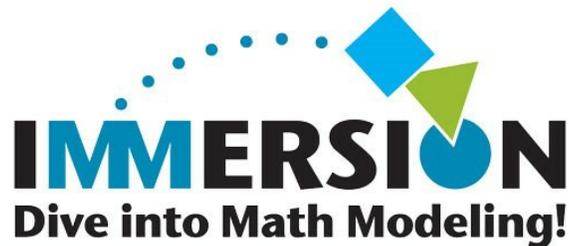


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## Beanbag Toss (Grades 6-8) (Version 1.0)

By Jody Britten, Marka Carson, Jacob Cordeiro, Misael Jiminez,  
and Erika Villegas-Jiminez



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### Module Description:

The classroom lesson presents students with the task of developing a fair—yet challenging—beanbag toss game. The game must be fair enough to attract players, and challenging enough to keep them invested. Students use the resources at their disposal to design a carnival game, and use data to set an appropriate level of challenge by changing player accuracy. Students may brainstorm one of many different modeling problems:

- How big should the target be?
- How far should a player stand from the target?
- What kind of obstacles should be in the way?

The activity involves possible mathematical tools drawn from data collection, probabilities, and distribution

In addition to a student worksheet, this resource contains information for instructors, including a list of learning goals with relevant Common Core Standards and a detailed

lesson plan.

This activity was developed with NSF funding (Grant STEM-C-1441024).

## Teaching Setting:

This activity was designed for grades 6-8.

## QUBES Citation:

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## Related Materials and Opportunities:

This resource was created by members of the [Math Modeling Hub \(MMHub\)](#). MMHub is an online community and resource repository for the teaching and learning of mathematical modeling at all grade levels. It is being collaboratively organized by COMAP, NCTM, and SIAM - three substantial mathematics professional societies with interests in modeling education. MMHub recently launched its beta testing phase and is actively seeking users and feedback around their modeling teaching materials. [Browse other MMHub resources](#), which are designed for pre-K through graduate students, or [visit their Getting Started page](#) to learn how you can get involved.

The authors of this resource also designed beanbag toss activities for students in [grades 3-5](#) and [K-2](#). It's never too early to introduce mathematical modeling to your students!

If you are interested in incorporating mathematical modeling into your classroom, you may find it useful to reference the [Guidelines for Assessment and Instruction in Mathematical Modeling Education \(GAIMME\) Report](#), which describes what mathematical modeling is and provides guidance on how to teach it to students at different grade levels. [Learn more about the GAIMME Report and download it here.](#)

Are you interested in advancing the teaching and learning of mathematical modeling in K-16 classrooms? Attend the Mathematical Sciences Research Institute's [Critical Issues in Mathematics Education 2019: Mathematical Modeling in K-16: Community and Cultural Context conference](#) in Berkeley, CA on March 6-8, 2019. Registration deadline: March 8, 2019. Register by December 6, 2018 to apply for funding. [Click here to learn more and register.](#)

*If you adopt and adapt this module, you are highly encouraged to share your adaptation back with the QUBES community using the QUBES Resources System for sharing Open Education Resources.*

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QUBES is a community of math and biology educators who share resources and methods for preparing students to use quantitative approaches to tackle real, complex, biological problems.

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