

BURNS  MCDONNELL®



**BATTLE OF
THE BRAINS**

Kansas City's most exciting K-12 STEM competition!

2023

COMPETITION PACKET

brought to you by

 **BURNS
MCDONNELL®**
FOUNDATION


**SCIENCE
CITY**

botbkc.com | #BOTBKC

WHAT IS BATTLE OF THE BRAINS?

Inspired by kids, built by Burns & McDonnell.

It's Kansas City's most exciting K-12 STEM competition — Burns & McDonnell Battle of the Brains. Metro-area schools can earn a piece of \$155,000+ in grants for STEM education by dreaming up an exhibit concept for Science City — and one student team sees its idea come to life in a big way! So far, more than 30,000 students in 55 school districts have benefited from this immersive educational opportunity.

What is your team's concept for the next \$1 million exhibit at Science City?

BENEFITS

- A competition for all — general education classrooms, teacher-led enrichment, gifted programs, etc.
- Clear expectations and rules with a high level of support from competition organizers.
- Encourages teamwork, collaboration and executive functioning skills with a real-world challenge.
- No-cost, high-reward and relevant experience for students and teachers.
- Opportunity to connect with Burns & McDonnell STEM professionals.
- Process encourages use of design thinking principles and 21st century skills used by Burns & McDonnell professionals every day.
- Project-based learning that aligns with NGSS Science & Engineering Practices and can be incorporated into existing curriculum.
- Supports big thinking, a growth mindset and developing the “whole child.”

GRANT DISTRIBUTION

The Burns & McDonnell Foundation awards \$155,000+ in grants. The grand prize winner also has the opportunity to work with Burns & McDonnell architects, engineers, construction managers, graphic designers and researchers to bring its ideas to life at Science City.

- \$50,000 grand prize
- \$25,000 finalist
- \$20,000 finalist
- \$15,000 finalist
- \$10,000 finalist
- 15, \$2,500 finalists

PARTICIPATION

Burns & McDonnell Battle of the Brains has two divisions: elementary (K-6) and secondary (7-12). Each team must design a STEM exhibit focused around a single topic or main idea.

- Entrants must be full-time K-12 students and be currently enrolled in and attending a public, private, parochial or home-based school in any of the following counties:
 - Kansas: Atchison, Douglas, Franklin, Jefferson, Johnson, Leavenworth, Miami, Shawnee, Wyandotte
 - Missouri: Bates, Buchanan, Caldwell, Cass, Clay, Clinton, Jackson, Johnson, Lafayette, Livingston, Platte, Ray
- Team size is limited to 25 students. A school may submit an unlimited number of entries.
- Each team may have one leader or two co-leaders who are educators employed by the school.

PROPOSAL DELIVERABLES

Written Components

- Cover Letter (max. 1,500 characters)
- Interactive Exhibit Engagement
 - 6-8 exhibit element descriptions (accompanying the graphics)
 - (max. 1,500 characters per description)
- Constructability Statement (max. 1,500 characters)
- Construction Materials Estimate

Video and Graphic Components

- Interactive Exhibit Engagement
 - 6-8 exhibit element graphics (accompanying the descriptions)
- Exhibit Floor Plan
- Commercial (max. 1 min.)
- Billboard
- Team Choice Video (max. 3 min.)
 - Option 1: STEM Activity
 - Option 2: Career Profiles

All deliverables must be in English and cannot contain information identifying your school. Do not include any hyperlinks to additional content.

DEADLINE

All proposal deliverables and video must be uploaded to botbkc.com by 5 p.m. Central on Nov. 9.

JUDGING

Entries are first screened for compliance after the competition deadline. Then a dedicated group of hundreds of Burns & McDonnell and Science City employees evaluate each submission to determine a top 20. Only 10 entries from each division are elevated to a top 20, where submissions are then evaluated against each other regardless of division.

KEY DATES



Competition Sign-Up Period



Battle Plan Teacher Info Sessions



Proposal Upload Period



Battle Bash – Teacher Appreciation Event



Judging



Top 20 Finalists Announced



Community Recognition



Awards Ceremony

RUBRIC

Section 1: Cover Letter

Expectations	0-3	4-7	8-10	/10
<ul style="list-style-type: none"> Clearly expresses the exhibit's main idea. Explains the inspiration behind the exhibit. Explains how the exhibit will enhance Science City's visitor experience. 	<ul style="list-style-type: none"> Doesn't explain a main idea. Doesn't address the inspiration behind the exhibit. Doesn't explain how the exhibit enhances Science City. 	<ul style="list-style-type: none"> Presents a main idea but doesn't explain it well. Briefly states how the team was inspired to develop the exhibit. Mentions the exhibit enhances Science City but needs more explanation. 	<ul style="list-style-type: none"> Presents and clearly explains a main idea. Clearly explains how the team was inspired to develop the exhibit. Clearly explains how the exhibit enhances Science City. 	

Section 2: Interactive Exhibit Engagement

Expectations	0-8	9-17	18-25	/25
<ul style="list-style-type: none"> Explains how the exhibit helps users learn through fun, hands-on activities. Describes how the exhibit teaches STEM principles or concepts. Outlines how the exhibit appeals to users of all ages. Uses well-written, well-edited text to describe the exhibit. Uses original diagrams, sketches, models and/or renderings to illustrate exhibit elements. 	<ul style="list-style-type: none"> Exhibit elements provide learning but are generally not hands-on. STEM concepts are unclear or the information is inaccurate. Exhibit appeals to one narrow age group. Text is not clear or is poorly written and edited. Original diagrams, sketches, models and/or renderings are unclear or do not provide much detail about the exhibit. 	<ul style="list-style-type: none"> Exhibit elements are fun and hands-on but the learning is not generally incorporated into the activities. STEM concepts are explained but need more development. Exhibit appeals to a few different age groups. Text is descriptive but could use some editing. Original diagrams, sketches, models and/or renderings provide some detail about the exhibit. 	<ul style="list-style-type: none"> Exhibit elements are fun and hands-on and the learning is built into the activities. STEM concepts are comprehensive, accurate and easily understood. Exhibit appeals to all age groups. Text is descriptive, well-written and well-edited. Original diagrams, sketches, models and/or renderings strongly detail the exhibit. 	

Section 3: Constructability Statement and Construction Materials Estimate

Expectations	0-1	2-3	4-5	/5
<ul style="list-style-type: none"> Describes how the exhibit stands up to intense daily use. Explains the exhibit's safety. Provides a list of materials needed with estimated pricing, within an approximate \$250,000 budget. 	<ul style="list-style-type: none"> The exhibit's durability to intense daily use is not explained. The exhibit's safety is not addressed. The list of materials is missing, incomplete or provides no pricing/total cost. 	<ul style="list-style-type: none"> Provides 1-2 examples explaining durability to intense daily use. The exhibit's safety is mentioned briefly but not explained. The list of materials is somewhat complete, but some pricing is missing or the total cost is dramatically over/under the budget. 	<ul style="list-style-type: none"> Provides 3+ examples explaining durability to intense daily use. The exhibit's safety is fully explained. The list of materials is detailed and complete with pricing and takes full advantage of the budget. 	

Section 4: Commercial

Expectations	0-1	2-3	4-5	/5
<ul style="list-style-type: none"> Advertises the exhibit to Science City visitors. Highlights what visitors will experience at the exhibit. 	<ul style="list-style-type: none"> Doesn't include a call to action for people to visit Science City and/or the exhibit. Doesn't mention any of the exhibit elements. 	<ul style="list-style-type: none"> Invites visitors to Science City but sales pitch could be more developed. Mentions only one exhibit element or doesn't include how visitors will interact with the exhibit. 	<ul style="list-style-type: none"> Invites visitors to Science City to experience the exhibit using persuasive sales language. Mentions several exhibit elements and how visitors will interact with the exhibit. 	

Section 5: Billboard

Expectations	0	1	2	/2
<ul style="list-style-type: none"> Targets brief, clear advertising message to Science City visitors. Illustrates a bold and simple visual featuring the exhibit. 	<ul style="list-style-type: none"> Billboard text exceeds 10 words (including use of "Science City" and the exhibit title). Design has too many elements (i.e. cluttered, unreadable). 	<ul style="list-style-type: none"> Billboard text uses no more than 10 words but message to visitors is unclear. Design is somewhat hard to focus on and lacks clarity. 	<ul style="list-style-type: none"> Billboard text uses no more than 10 words (including use of "Science City" and the exhibit title) and message to visitors is clear. Design is bold and simple. 	

Section 6: Team Choice Video

Expectations	0-1	1-2	3	/3
<p>Option 1: STEM Activity</p> <ul style="list-style-type: none"> Relates to the STEM principles or concepts in the exhibit and enhances learning beyond the exhibit. STEM activity: Features a STEM challenge, demonstration or experiment that is easily replicated. 	<ul style="list-style-type: none"> Doesn't relate to the STEM principles or concepts in the exhibit. STEM challenge, demonstration or experiment is not clearly outlined. 	<ul style="list-style-type: none"> Somewhat relates to the STEM principles or concepts in the exhibit and/or doesn't expand on what's learned in the exhibit. STEM challenge, demonstration or experiment is clearly outlined but would be challenging for most viewers to replicate. 	<ul style="list-style-type: none"> Directly connects with the STEM principles or concepts in the exhibit and provides a great resource to educators and/or Science City staff to enhance learning beyond the exhibit. STEM challenge, demonstration or experiment is clearly outlined and easy for the viewer to replicate. 	
<p>Option 2: Career Profiles</p> <ul style="list-style-type: none"> Relates to the STEM principles or concepts in the exhibit and enhances learning beyond the exhibit. Career profiles: Features several careers and discusses what type of projects, research or daily tasks someone in that role performs. 	<ul style="list-style-type: none"> Doesn't relate to the STEM principles or concepts in the exhibit. Only one career featured. 	<ul style="list-style-type: none"> Somewhat relates to the STEM principles or concepts in the exhibit and/or doesn't expand on what's learned in the exhibit. At least two careers are featured, but discussion of the career needs more development. 	<ul style="list-style-type: none"> Directly connects with the STEM principles or concepts in the exhibit and provides a great resource to educators and/or Science City staff to enhance learning beyond the exhibit. At least two careers are featured and clearly discussed. 	

POINTS TOTAL

/50