

BURNS  MCDONNELL®



**BATTLE OF
THE BRAINS**

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

2019

COMPETITION PACKET

brought to you by

 **BURNS
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FOUNDATION


**SCIENCE
CITY**

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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-plus 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, nearly 20,000 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

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

GRANT DISTRIBUTION

The Burns & McDonnell Foundation awards \$155,000-plus 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
- and 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.
- A school may submit an unlimited number of entries.
- Each team may have one leader or two co-leaders.

DELIVERABLES

- **PDF proposal**, which must follow these rules to be compliant:
 - Be in English.
 - Be on letter-sized paper (8.5-by-11 inch).
 - Be a maximum of four (4) single-sided pages.
 - Be submitted as a PDF.
 - Address all rubric sections.
 - Include at least one diagram/sketch/rendering of your exhibit (included in page count).
 - Be blind, with no information identifying your school.
 - Not include hyperlinks to additional content.
- **Video commercial** for the exhibit, which must follow these rules to be compliant:
 - Be in English.
 - Be no longer than two (2) minutes.

RECOMMENDATIONS

- For the PDF proposal, we suggest margins of 1 inch and font size no smaller than 10 points.
- Though only one (1) diagram/sketch/rendering is required, we encourage including more than one.
- Addressing the rubric sections in order is greatly preferred by our judges.

DEADLINE

PDF proposal and video must be uploaded to botbkc.com by 5 p.m. Central on Oct. 22.

JUDGING

Round 1: Entries are screened for compliance.

Round 2: Ten (10) entries from each division are elevated to a top 20, where they are then evaluated against each other regardless of division. These scores account for 70% of the final rankings.

Round 3: Public voting determines the remaining 30% of rankings.

KEY DATES



Competition Sign-Up



Battle Plan Teacher Info Sessions



Proposal Upload Period



Teacher Appreciation Event



Round 1 and 2 Judging



Finalists Announced



Voting



Awards Ceremony

RUBRIC

Section 1: Creativity and Inspiration				
Expectations	1-5	6-11	12-17	/17
<ul style="list-style-type: none"> Clearly expresses the exhibit's main idea. Demonstrates how the exhibit teaches STEM principles or concepts. Explains the inspiration behind the exhibit. Explains ideas the team considered and didn't use, and why. 	<ul style="list-style-type: none"> Doesn't explain a main idea. STEM concepts are unclear or the information is inaccurate. Doesn't address the inspiration behind the exhibit. Explains only the one idea the team used. 	<ul style="list-style-type: none"> Presents a main idea but doesn't explain it well. STEM concepts are explained but need more development. Briefly states how the team was inspired to develop the exhibit. Explains 2-3 ideas considered and why they weren't used. 	<ul style="list-style-type: none"> Presents and clearly explains a main idea. STEM concepts are comprehensive, accurate and easily understood. Clearly explains how the team was inspired to develop the exhibit. Explains 4+ ideas considered and why they weren't used. 	
Section 2: Interactive Exhibit Engagement				
Expectations	1-8	9-17	18-25	/25
<ul style="list-style-type: none"> Explains how exhibit elements help users learn through fun, hands-on activities. Describes several different activities the user can explore. Outlines how the exhibit appeals to users of all ages. Provides examples of follow-up questions the exhibit will generate. Uses well-written, well-edited text to describe the exhibit. Uses one or more diagrams, sketches, models and/or renderings to illustrate the exhibit. 	<ul style="list-style-type: none"> Exhibit elements provide learning but are generally not hands-on. Describes 1-2 different activities the user can explore. Appeals to one narrow age group. Doesn't offer examples of follow-up questions. Text is not clear or is poorly written and edited. 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 in the activities. Describes 3-5 different activities the user can explore. Appeals to a few different age groups. Offers 1-2 examples of follow-up questions the exhibit will generate. Text is descriptive but could use some editing. 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. Describes 6+ different activities the user can explore. Appeals to all age groups. Offers 3+ examples of follow-up questions the exhibit will generate. Text is descriptive, well-written and well-edited. Diagrams, sketches, models and/or renderings strongly detail the exhibit. 	
Section 3: Relevancy				
Expectations	1	2	3	/3
<ul style="list-style-type: none"> Describes how the exhibit is applicable to the user's life. Outlines STEM jobs related to the exhibit. 	<ul style="list-style-type: none"> Doesn't show how the exhibit is applicable to the user's life. Doesn't include information about STEM jobs related to the exhibit. 	<ul style="list-style-type: none"> Provides 1-2 ways the exhibit is applicable to the user's life. Provides limited information about STEM jobs related to the exhibit. 	<ul style="list-style-type: none"> Provides 3+ ways the exhibit is applicable to the user's life. Provides thorough information about STEM jobs related to the exhibit. 	
Section 4: Constructability				
Expectations	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. 	
POINTS TOTAL				/50