

BURNS  McDONNELL



**BATTLE OF  
THE BRAINS**

a K-12 STEM Educational Competition

# COMPETITION PACKET



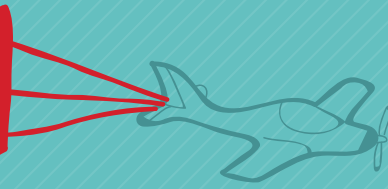
BROUGHT TO YOU BY

BURNS  McDONNELL  
FOUNDATION

KANSAS CITY'S SCIENCE CENTER  
**SCIENCE CITY**  
AT UNION STATION

With the Burns & McDonnell Battle of the Brains,  
your school group could earn a piece of a

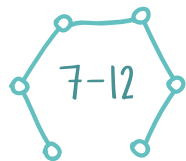
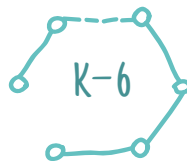
**\$155,000 GRANT**



for STEM education, just by designing the next great  
exhibit for Kansas City's Science Center, Science City.  
**WE'RE GLAD YOU'VE JOINED IN!**

### BATTLE OF THE BRAINS HAS TWO DIVISIONS

ELEMENTARY



SECONDARY

**THERE IS NO LIMIT TO THE NUMBER OF ENTRIES A SCHOOL MAY SUBMIT.**

The same teacher may lead multiple teams. Your team must design a STEM exhibit focused around a single topic or main idea of your choice.

**This year, there's a unique new twist:** The exhibit is going outside! Union Station is planning a new outdoor events plaza and science center area. This exhibit will be the centerpiece of the outdoor science space, so safety and durability are even more important. Put on those sunglasses, think big and create something amazing!

### ENTRANTS MUST

• Be currently enrolled in and attending a public, private, parochial or home-based school in any of the following counties:

- **KANSAS:** Atchison, Douglas, Franklin, Johnson, Leavenworth, Miami, Shawnee and Wyandotte.
- **MISSOURI:** Buchanan, Cass, Clay, Clinton, Jackson, Johnson, Lafayette, Livingston, Platte and Ray.

• Be full-time K-12 students.

# COMPETITION CRITERIA

## ENTRIES ARE JUDGED IN THE FOLLOWING CATEGORIES.

A scoring rubric outlining criteria requirements and word count for each category is provided in this packet.



**CREATIVITY & INSPIRATION**  
30 points: 800-word maximum



**INTERACTIVE EXHIBIT ENGAGEMENT**  
30 points: 800-word maximum



**VISUAL & WRITTEN PRESENTATION**  
15 points



**SOCIAL MEDIA & SUPPLEMENTAL MATERIALS**  
10 points: 500-word maximum



**CONSTRUCTABILITY**  
10 points: 400-word maximum



**STUDENT INVOLVEMENT**  
5 points: 300-word maximum

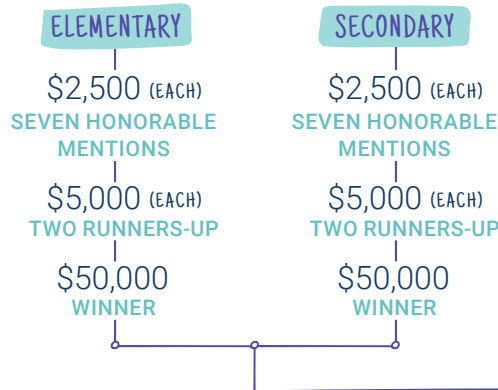
The Burns & McDonnell Foundation reserves its right to modify the rules without materially affecting the terms and conditions hereof. Entrants have the responsibility to check the competition website after Sept. 4, 2015, for any updates to the rules. Answers to frequently asked questions and legal regulations are available at [botbkc.com](http://botbkc.com).

## ENTRIES MUST

- Include the entry form information requested on the submission website.
- Be a maximum of four or fewer single-sided pages, **not including** the entry form information.
- Include at least one page with a sketch of the exhibit floor plan, though you may also include other graphics and sketches. (These **will be** included in the page count.)
- Include a video (.mp4, .mov or .flv), no longer than two minutes, describing the design.
- Focus on a topic/main idea suitable for presentation outdoors.
- Address the categories in the Competition Criteria (see to the left and in rubric) in order.
- Be blind, with no identifying details anywhere in the body of the entry. School information must be limited to the entry form section.
- Be in English.
- Be on letter-sized paper (8.5-by-11 inch) with 1-inch margins.
- Use a standard font no smaller than 10 points. (Don't make us bring out our reading glasses!)
- Be saved and submitted in a PDF that is no larger than 10 MB.
- Be uploaded to [botbkc.com](http://botbkc.com) by 5 p.m. Central time on October 21.

# PRIZES

THE BURNS & McDONNELL FOUNDATION AWARDS  
\$155,000 IN GRANT MONEY AS FOLLOWS:



ONE OF THE DIVISION WINNERS WILL ALSO WIN THE **GRAND PRIZE**:

The opportunity to work with architects, engineers, construction managers, graphic designers and researchers to bring their ideas to life at Science City!

## JUDGING PROCESS

THE BATTLE OF THE BRAINS COMPETITION IS JUDGED  
IN A VIGOROUS PROCESS BY THREE GROUPS.

### ROUND 1

Burns & McDonnell and Science City screens **all entries** for compliance.

### ROUND 2

**The top entries** are judged by a Burns & McDonnell/Science City panel of experts in science, engineering and academia. The panel evaluates and ranks the entries according to the criteria, and based on the ranking selects the Top 20, 10 entries from each division. The judges' ranking of the top 20 accounts for 70 percent of the final rankings. All decisions of the panel are final.










### ROUND 3

**The remaining 30 percent** of the final rankings is determined by a public vote at [botbkc.com](http://botbkc.com) from November 7-14. Everyone in Kansas City and across the country who has an eligible email address can vote.

**PUBLIC VOTE, SIDE NOTE:**

The public vote will affect the final rankings.  
Getting out the vote can make a difference!

# KEY DATES

-  **Now-September 11:** Visit [botbkc.com](http://botbkc.com) to sign up and let us know your school group will participate.
-  **Late July-August:** Attend an educator workshop at Science City to learn more about exhibit design, free online design tools and other valuable insights. Check out the latest workshop schedule at [botbkc.com](http://botbkc.com).
-  **September 11:** Register your school group by this date to be eligible.
-  **Now-October 21:** Develop your design concept and prepare your entry, keeping the Competition Criteria in mind.
-  **October 14-21:** Upload your proposal to [botbkc.com](http://botbkc.com). Entries must be received by 5 p.m. CDT on October 21.
-  **October 22-November 5:** A rigorous judging process will evaluate your ingenious designs and select 10 finalists in each division.
-  **November 6:** We'll announce the finalists, launching the public vote at [botbkc.com](http://botbkc.com).
-  **November 7-14:** Get out the vote! Anyone with a valid email address is eligible to vote, so use that brainpower to develop a campaign. The public vote counts for 30 percent of the final selection.
-  **November 18:** We'll announce the winners in an excitement-filled awards ceremony at Union Station.

## WANT TO KNOW MORE?

Visit [botbkc.com](http://botbkc.com) for more information or email your specific questions to [botbkc@burnsmcd.com](mailto:botbkc@burnsmcd.com).

Also, don't forget to follow us on social media at [facebook.com/BattleoftheBrainsKC](https://facebook.com/BattleoftheBrainsKC) and [twitter.com/botbkc](https://twitter.com/botbkc). These pages are a great source of inspiration and information for educators, parents and students!

# Burns & McDonnell Battle of the Brains Entry Form Information

YOU'LL INPUT THIS INFORMATION ON THE SUBMISSION WEBSITE.

*You DO NOT have to attach this sheet; this screenshot is provided to outline the information the submission website will request.*

## Burns & McDonnell Battle of the Brains Entry Form

Title of Exhibit: \*

Exhibit Theme or Main Idea (50 character limit): \*

Division: \*

School District: \*

School Name: \*

School Address: \*

City: \*

State: \*

Zip: \*

Educator Contact Name: \*

Educator Contact Email: \*

Educator Contact Phone Number: \*

School Main Office Phone Number: \*

### Student Team Roster

Please upload a PDF or Excel document listing the name and grade of all student team members in the following format:

Column A: First Name  
Column B: Last Name  
Column C: Grade

Student Team Roster: \*

Select a file

### Exhibit Summary

Please provide a summary of your exhibit design. Should your exhibit become a finalist, this will be used on the website for the public vote.

Word limit: 350 words

### Exhibit Summary

Please provide a summary of your exhibit design. Should your exhibit become a finalist, this will be used on the website for the public vote.

Word limit: 350 words

Exhibit Summary: \*

0/350

### Video Submission

Your video commercial should be no longer than two minutes. (FLV, MP4, MOV files accepted.)

Upload Video: \*

Select a file

### Affirmation Statement

We affirm:

- that this entry for the Burns & McDonnell Battle of the Brains is **original**, not a resubmission from earlier competitions.
- that this entry has been **independently conceived and developed by the student members of the team**.
- that we have **read and understand the rules** and the **fine print** of the competition.
- that this entry satisfies the **requirements listed in the Entry Checklist**.
- that we have the **approval of our school's principal** to enter these students in this competition.

Affirmation: \*  We affirm.

I agree to be contacted for media purposes regarding the competition (not required). \*  Yes  No



# 2015 BATTLE OF THE BRAINS JUDGING RUBRIC

Title of Exhibit Design: \_\_\_\_\_

CRITERIA	0 - 10	11 - 20	21 - 30	POINTS
<p><b>Creativity and Inspiration</b> 800-word maximum</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The proposal clearly explains the exhibit's main idea.</li> <li><input type="checkbox"/> The exhibit teaches STEM principles or concepts in some form.</li> <li><input type="checkbox"/> The proposal explains the inspiration behind the exhibit design.</li> <li><input type="checkbox"/> The proposal explains how the exhibit will remain relevant in the future.</li> </ul>	<ul style="list-style-type: none"> <li>• The proposal doesn't explain the main idea.</li> <li>• It is difficult to determine what STEM concept is being presented or the information is inaccurate.</li> <li>• The proposal doesn't explain how the group was inspired to develop the exhibit.</li> <li>• The proposal provides one reason why the exhibit will remain relevant in the future.</li> </ul>	<ul style="list-style-type: none"> <li>• The proposal presents more than one main idea or doesn't explain the main idea well.</li> <li>• The STEM concept is explained but could be developed further.</li> <li>• The proposal briefly states how the group was inspired to develop the exhibit.</li> <li>• The proposal provides at least two reasons why the exhibit will remain relevant in the future.</li> </ul>	<ul style="list-style-type: none"> <li>• The proposal properly presents and fully explains the main idea.</li> <li>• The STEM concept is accurate, comprehensive, well-supported and makes the concepts easily understood.</li> <li>• The proposal clearly states how the group was inspired to develop the exhibit.</li> <li>• The proposal provides at least four reasons why the exhibit will remain relevant in the future.</li> </ul>	/30
CRITERIA	0 - 10	11 - 20	21 - 30	POINTS
<p><b>Interactive Exhibit Engagement</b> 800-word maximum</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Users can interact with the exhibit.</li> <li><input type="checkbox"/> The exhibit encourages the user to ask follow-up questions.</li> <li><input type="checkbox"/> The exhibit makes learning fun for users.</li> <li><input type="checkbox"/> The activities are challenging to different age groups.</li> <li><input type="checkbox"/> The exhibit takes advantage of the outdoor environment.</li> <li><input type="checkbox"/> The exhibit demonstrates a blend of interactive components and static educational information.</li> </ul>	<ul style="list-style-type: none"> <li>• The user interacts with the exhibit in only one way.</li> <li>• The exhibit doesn't encourage questions for the user.</li> <li>• The exhibit doesn't provide any engaging or fun elements.</li> <li>• The activities are not challenging.</li> <li>• The exhibit would work better indoors than outdoors.</li> <li>• The exhibit is primarily static educational information.</li> </ul>	<ul style="list-style-type: none"> <li>• The user gets two or more opportunities to investigate the topic.</li> <li>• The exhibit provides several clarifying, probing and challenging questions.</li> <li>• The exhibit provides some fun elements.</li> <li>• The activities are challenging for only a specific age group.</li> <li>• The exhibit would work equally well indoors and outdoors.</li> <li>• The exhibit is primarily interactive components with little static educational information.</li> </ul>	<ul style="list-style-type: none"> <li>• The user gets four or more opportunities to investigate, test and make observations.</li> <li>• The exhibit provides a sequence of clarifying, probing and challenging questions.</li> <li>• The fun or "wow" factor is clearly presented.</li> <li>• The activities are challenging but achievable for all ages.</li> <li>• The exhibit is most suitable for the outdoors and takes full advantage of the environment.</li> <li>• The exhibit demonstrates a blend of interactive components and static educational information.</li> </ul>	/30
CRITERIA	0 - 3	4 - 10	11 - 15	POINTS
<p><b>Visual and Written Presentation</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The proposal includes diagrams, sketches and/or renderings to support the exhibit's big idea.</li> <li><input type="checkbox"/> The text accurately describes ideas and processes.</li> <li><input type="checkbox"/> The proposal is neatly prepared and easy to read.</li> <li><input type="checkbox"/> The proposal includes a video explaining the exhibit.</li> </ul>	<ul style="list-style-type: none"> <li>• The proposal doesn't include diagrams, sketches and/or renderings or they do not support the exhibit's big idea.</li> <li>• The text is absent or doesn't describe each idea and process.</li> <li>• The proposal is poorly prepared and hard to follow.</li> <li>• The proposal doesn't include a video explaining the exhibit.</li> </ul>	<ul style="list-style-type: none"> <li>• The proposal includes basic diagrams, sketches and/or renderings that somewhat support the exhibit's big idea</li> <li>• The text is limited in describing each idea and process.</li> <li>• The proposal preparation is adequate.</li> <li>• The proposal includes a video that somewhat explains the exhibit.</li> </ul>	<ul style="list-style-type: none"> <li>• The proposal includes diagrams, sketches and/or renderings that strongly support the exhibit's big idea.</li> <li>• The text accurately describes each idea and process.</li> <li>• The proposal is neatly prepared and easy to read.</li> <li>• The proposal includes a video that clearly explains the exhibit.</li> </ul>	/15



CRITERIA	0 - 3	4 - 6	7 - 10	POINTS
<p><b>Social Media and Supplemental Materials</b> 500-word maximum</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The STEM concepts are translated to social media (for Facebook, Twitter, Instagram, Tumblr, etc.).</li> <li><input type="checkbox"/> The exhibit provides supplemental educational materials (relevant articles, books, videos, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>• No examples of social media posts (for Facebook, Twitter, Instagram, Tumblr, etc.) are provided.</li> <li>• No examples of supplemental educational materials (articles, books, videos, etc.) are provided.</li> </ul>	<ul style="list-style-type: none"> <li>• One example of a social media post (for Facebook, Twitter, Instagram, Tumblr, etc.) is provided.</li> <li>• One example of supplemental educational materials (articles, books, videos, etc.) is provided.</li> </ul>	<ul style="list-style-type: none"> <li>• Two or more examples of social media posts (for Facebook, Twitter, Instagram, Tumblr, etc.) are provided.</li> <li>• Two or more examples of supplemental educational materials (articles, books, videos, etc.) are provided.</li> </ul>	/10
CRITERIA	0 - 3	4 - 6	7 - 10	POINTS
<p><b>Constructability</b> 400-word maximum</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The proposal explains the exhibit's durability to wear and the weather.</li> <li><input type="checkbox"/> The proposal explains the exhibit's safety.</li> <li><input type="checkbox"/> The proposal includes a list of materials needed.</li> <li><input type="checkbox"/> The materials list is within an approximate \$250,000 budget.</li> </ul>	<ul style="list-style-type: none"> <li>• The durability of the exhibit to wear and the weather is not explained.</li> <li>• The safety of exhibit is not explained.</li> <li>• The list of materials needed is not detailed and many components are missing.</li> <li>• The list of materials is absent and no budget established.</li> </ul>	<ul style="list-style-type: none"> <li>• The durability of the exhibit to wear and the weather is explained with limited examples of why the exhibit should last.</li> <li>• The safety of the exhibit is listed but not explained.</li> <li>• The list of materials needed appears to be somewhat complete and researched, but some components are missing.</li> <li>• The list of materials is not broken down and/or not within the approximate budget.</li> </ul>	<ul style="list-style-type: none"> <li>• The durability of the exhibit is explained with good examples of why the exhibit should last to wear and the weather.</li> <li>• Attention to the safety of exhibit is fully explained and supported.</li> <li>• The list of materials needed appears complete and well researched.</li> <li>• The list of materials is detailed and outlines the cost of each within the approximate budget.</li> </ul>	/10
CRITERIA	0 - 1	2 - 3	4 - 5	POINTS
<p><b>Student Involvement</b> 300-word maximum</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The proposal explains how students researched the STEM concepts.</li> <li><input type="checkbox"/> The proposal explains the ideas and concepts the team considered and why they were not used.</li> <li><input type="checkbox"/> The proposal includes information about STEM jobs related to the exhibit topic that students could pursue in the future.</li> </ul>	<ul style="list-style-type: none"> <li>• The proposal doesn't provide an outline of the process used to research the STEM concepts.</li> <li>• The proposal explains only the one idea or concept the team used.</li> <li>• The proposal doesn't include information about STEM jobs related to the exhibit topic that students could pursue in the future.</li> </ul>	<ul style="list-style-type: none"> <li>• The proposal provides a limited outline of the process used to research the STEM concepts.</li> <li>• The proposal explains at least two ideas or concepts the team considered and tells why they were not used.</li> <li>• The proposal provides limited information about STEM jobs related to the exhibit topic that students could pursue in the future.</li> </ul>	<ul style="list-style-type: none"> <li>• The proposal clearly outlines the process used to research the STEM concepts.</li> <li>• The proposal explains at least three ideas or concepts the team considered and provides the reasons they were not used.</li> <li>• The proposal provides relevant and thorough information about STEM jobs related to the exhibit topic that students could pursue in the future.</li> </ul>	/5

<b>POINTS TOTAL</b>	<b>/100</b>
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# ENTRY CHECKLIST

An otherwise extraordinary entry could be disqualified if it doesn't follow the rules. Use this checklist to help ensure you submit a qualified entry. It's a good idea to ask someone who hasn't been involved in the preparation to check your entry for compliance.

- Entry is from a public, private, parochial or home-based school in the following Kansas and Missouri counties: Atchison, Buchanan, Cass, Clay, Clinton, Douglas, Franklin, Jackson, Johnson (Kansas), Johnson (Missouri), Lafayette, Leavenworth, Livingston, Miami, Platte, Ray, Shawnee and Wyandotte.

---
- Entry is developed by full-time students in grades K-12.

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- Entry includes the form information requested on the submission website.

---
- Entry is a maximum of four single-sided pages, **NOT INCLUDING** the form information.

---
- Entry includes at least one page with a sketch of the exhibit floor plan, although it may also include other graphics and sketches. (These pages **WILL BE** included in the page count.)

---
- Entry includes a video (.mp4, .mov or .flv), no longer than two minutes, describing the design.

---
- Entry focuses on a topic/main idea suitable for an outdoor exhibit.

---
- Entry addresses the categories in the competition criteria in order.

---
- Entry is blind, with no identifying details anywhere in the body of the entry. School information must be limited to the entry form section.

---
- Entry is in English.

---
- Entry is on standard letter-sized paper (8.5-by-11 inch) with 1-inch margins.

---
- Entry uses a standard font no smaller than 10 points in size.

---
- Entry is saved and submitted in a PDF that is no larger than 10 MB.

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- Entry is uploaded at [botbkc.com](http://botbkc.com) by 5 p.m. Central time on October 21.