OFFICE of
EDUCATION INNOVATION

CITY OF INDIANAPOLIS

VRC

VEX • ROBOTICS • CHAMPIONSHIP

Presented by Roche

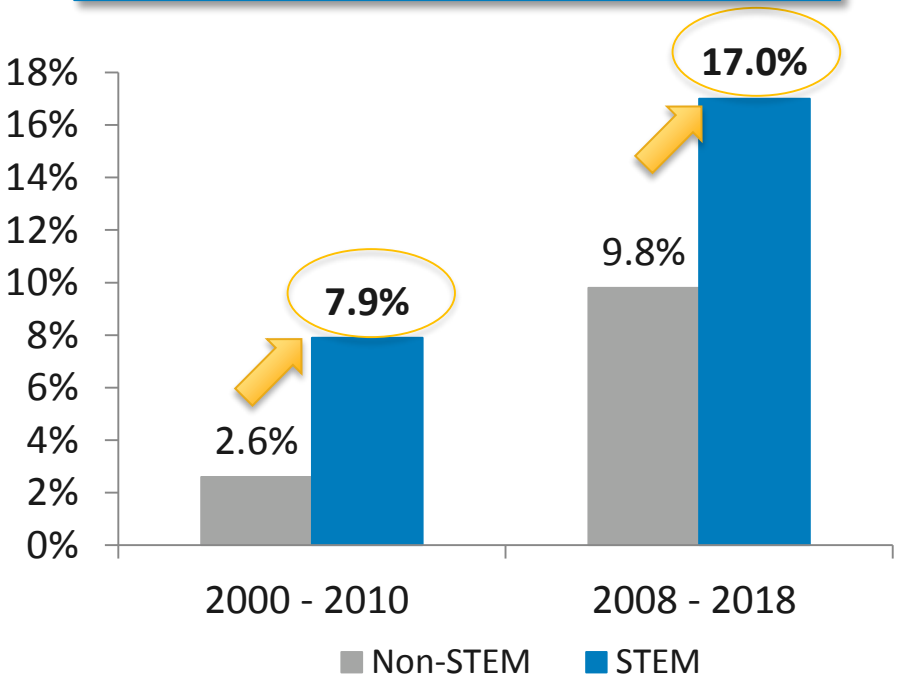
Indianapolis VEX Robotics Championship Overview **06/26/2015**

Watch: Mira Awards Video

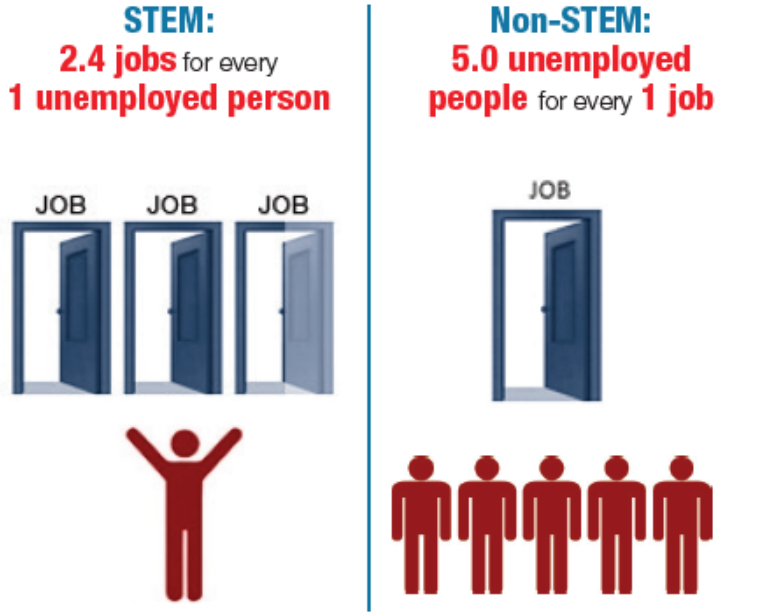
In Indiana, demand for STEM professionals is projected to drastically outpace supply

3,500 vacant STEM jobs existed in Indianapolis in the first quarter of 2013. *The average market value of these jobs* ***equaled $56,300****, which was* ***$10,000 higher*** *than the national average wage in 2013.*

U.S. Job Growth



STEM Skills are in Demand



Nearly 2/3 of teenagers said that they may be discouraged from pursuing STEM careers

According to a study by the University of Virginia, ***8th grade students responses to a survey demonstrated that interest in the STEM field was more important than having high test scores in Math.***

Why don't students go into STEM fields?

They do not know anyone who works in these fields (31%)

They do not understand what people in these fields do (28%)

High-quality programs that build STEM interest and skills can address these gaps

Robotics is an opportunity for ***students to engage in science, technology, engineering, and math (STEM) activities in an exciting atmosphere.***

Why robotics?

- Attending high-quality STEM afterschool programs leads to increased enrollment in STEM-related courses, increased test scores, and a higher likelihood of pursuing a STEM career
- High school graduates who participated in high-quality STEM curriculum are nearly three times as likely to major in STEM
- Students receiving high-quality STEM curriculum are 3 to 4 times more likely to study engineering

"Robotics has enabled me to explore my passion for technology and has led me to study Physics in college." – Jasmine Kalia, Franklin Central High School

"The IndyVRC provides an excellent opportunity for industry to connect with the future workforce of Indianapolis." – Topher Congdon, Roche Employee

The City of Indianapolis VEX Robotics Championship (IndyVRC) addresses these gaps for children and our city

OEI

*Mayor Ballard's vision is that all Indy students will have the opportunity to be **exposed to STEM concepts and careers. This event ignites interest in STEM leading to a greater likelihood of pursuing that career path later on.***

Speedway High School – 2014 Champions

Rationale for the Indy Championship

- The Mayor believes education is a critical factor in the lives of children and the health of our neighborhoods and city
- Robotics improves workforce preparation for the job growth in STEM pathways
- Robotics teaches teamwork, sportsmanship, and problem solving while developing life skills

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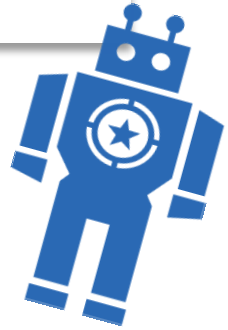


Outcomes of the IndyVRC in 2014

*The IndyVRC's impact has continued to **transform our city's STEM climate.***

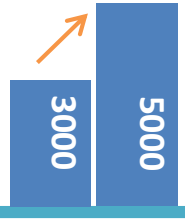
IndyVRC 2014 by the Numbers

125 Marion County public, private, & charter schools participated

800+ students competed

35 Interactive STEM Fair Booths held activities from robot chess to cockroach racing to the Ganassi racing cutaway car

250+ Volunteers supported in important positions

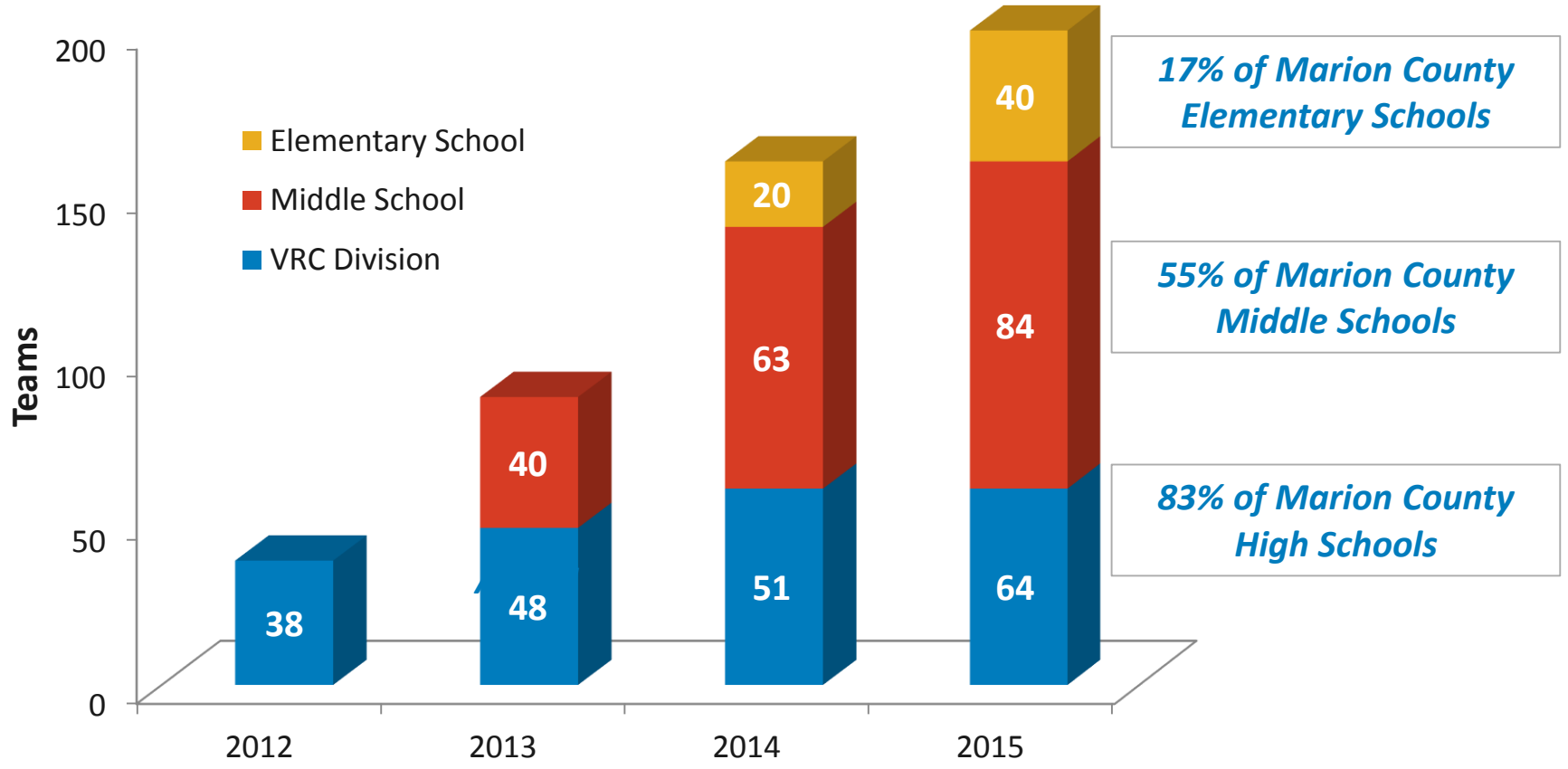


Spectator attendance rose by 66% this year, representing the increase in family and public support

Indy schools of all types have demonstrated tremendous interest in participating in the IndyVRC

*School participation in the annual City of Indianapolis VRC **nearly tripled** in the first three years of the event.*

Number of teams participating in the IndyVRC



17% of Marion County Elementary Schools

55% of Marion County Middle Schools

83% of Marion County High Schools

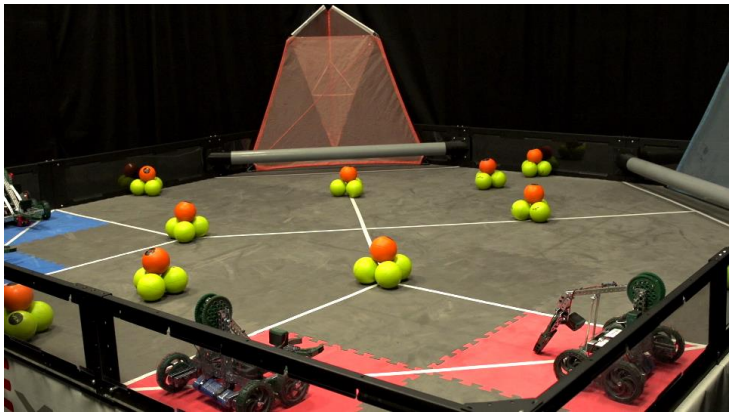
This year's games – Bank Shot & Nothing But Net!!!

*This year IndyVRC teams will compete in **two new exciting games!***

VRC Division: Nothing But Net

The Details:

- 94 balls and 10 bonus balls to score with
- 1 high goal / 1 low goal / climbing zones
- Two alliances compete in 1:45 minutes matches
- Object of the game is to attain a higher score by scoring balls in goals and elevating robots in the climbing zones

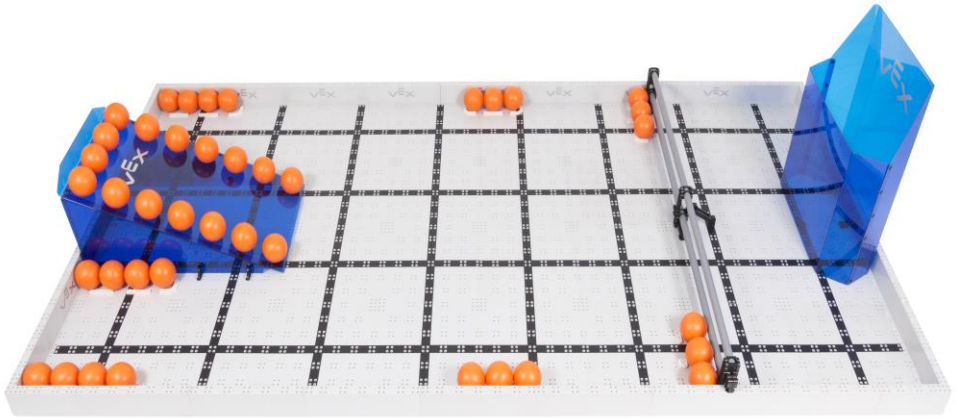


Watch the video!

VEX IQ Divisions: Bank Shot

The Details:

- 44 balls available to score with
- 1 scoring zone / 1 goal / 1 ramp / 16 cutouts on field
- 2 robots compete as an alliance in 60 sec. matches
- The object of the game is to attain the highest score by emptying cutouts, scoring balls and parking robots on the ramp



Watch the video!

Preparing for the IndyVRC

- Sign up on our google form / register with robot events
- Secure your equipment
- Recruit your team
- Begin strategizing about how you will play the game
- Build your robot
- Go to a workshop or other competition to test it out
- Rebuilt your robot
- Attend the IndyVRC

Important IndyVRC logistics

- ❑ Two day event (mandatory for VRC, not for others)
- ❑ All coaches and students must sign release forms to attend
- ❑ Either Nov. 14 -16 or Nov. 21 -23 (I will know soon)
- ❑ Bankers Life Fieldhouse
- ❑ Parking in the garage attached is typically free
  - ❑ Busses costs $20 in a lot down the street
- ❑ Coaches can bring in coolers of food for their team
- ❑ Teams get approximately seven matches
- ❑ ES – 2 competition fields, 1 skills field, 1 practice field (40)
- ❑ MS – 4 competition fields, 2 skills fields, 2 practice fields (84)
- ❑ VRC – 3 competition fields, 1 skills field, 1 practice field (64)
- ❑ Bring extra batteries!
- ❑ Dan Ward will be onsite with some extra parts / equipment but please plan ahead and bring extra parts
- ❑ Even if you don't make it to the finals, you should stay for awards
- ❑ We've changed the event agenda and requirements around..

Proposed Elementary and Middle School Schedule

We encourage teams to come the first day to get inspected but it's not mandatory.

Day One

Time	Action	Location
3:00pm – 5:00pm	Optional MS VEX IQ Division check-in and inspection	Entry Pavilion and Middle School VEX IQ pits

Day Two

Time	Action	Location
8:00am – 9:00am	Mandatory MS check-in and inspection	Entry Pavilion and Middle School VEX IQ pits
9:15am – 9:45am	IndyVRC Opening Ceremony	Main event floor
10:30am – 11:30am	MS VEX IQ division matches	Main event floor
11:30am – 12:15pm	MS VEX IQ division lunch	MS VEX IQ pits
12:15pm – 2:30pm	MS VEX IQ division matches	Main event floor
2:45pm – 3:15pm	Alliance selection process	Main event floor
3:15pm – 6:00pm	Playoffs, Awards, Closing Ceremony	Main event floor

Proposed VRC Division Schedule

Day One

Time	Action	Location
3:00pm – 4:00pm	VRC teams load-in	Entry Pavilion and VRC pits
4:00pm – 5:00pm	Mandatory VRC teams inspection	Main event floor
5:00pm – 6:30pm	Fields open for practice	Main event floor
7:00pm – 8:30pm	VRC Division matches	Main event floor
9:00pm	Lights out	N/A

Day Two

Time	Action	Location
8:30am – 9:00am	VRC Division teams setup in pits	VRC Division pits
9:15am – 9:45am	IndyVRC Opening Ceremony	Main event floor
10:00am – 12:00pm	VRC Division matches	Main event floor
12:00pm – 12:30pm	VRC Division lunch	VRC pits
12:30pm – 2:45pm	VRC Division matches	Main event floor
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Upcoming events

*Teams, mentors and coaches can look forward to **many professional development opportunities!***

Upcoming events

- August 15th – IndyVRC workshop: Building
- September 19th – IndyVRC workshop: Game strategy
- October 17th – IndyVRC workshop: Programming
- November 7th – IndyVRC workshop: Last chance / Teamwork
- November 13th – 15th or 20th – 22nd – Possible dates for the IndyVRC

All IndyVRC workshops will take place at Shortridge High School and last from 10am – 2pm

VisualEdge provides robotics experts to support all IndyVRC workshops

Getting involved

*A Championship of this size would **not be possible without support from volunteers and mentors** from the community.*

Mentoring	▪ 25 mentors connected through our office with participating schools ▪ In 2015, our goal is to have 188 teams compete, we would like to provide mentors to at least half of the schools interested in having a mentor. ▪ We need you, your friends, and coworkers!
Day of Event Volunteer	▪ Over 250 volunteers supported our event over the two day Championship ▪ In 2015, we are seeking to recruit about 275 volunteers to support the event ▪ Roles include: Judging, Registration, Queuing, Refereeing, Practice Fields, Set Up, Tear Down, Pit managers, and many more!
STEM Fair	▪ Over 35 STEM partners exhibited interactive booths and displays ▪ In 2015, we will provide space for 40 STEM community partners participate ▪ Over 5,000 people attended last year's free event ▪ In 2015, our goal is to have over 6,000 people attend the Championship and learn about the great STEM opportunities available in Indianapolis

In addition, we have over thirty community sponsors that make this event memorable for students

*None of this would be possible without the **generous contributions** from our community partners! **Our goal is** to develop a **sustainable model** to ensure individual school robotics programs succeed and grow for years to come.*

Questions?

To be a get involved with the IndyVRC or ask any questions, please contact Stephanie Bothun at Sbotun@cicpindiana.com.