

Case
1-15-18

SEVENTH GRADE

- What is FIRST Robotics?

For the

Inspiration &

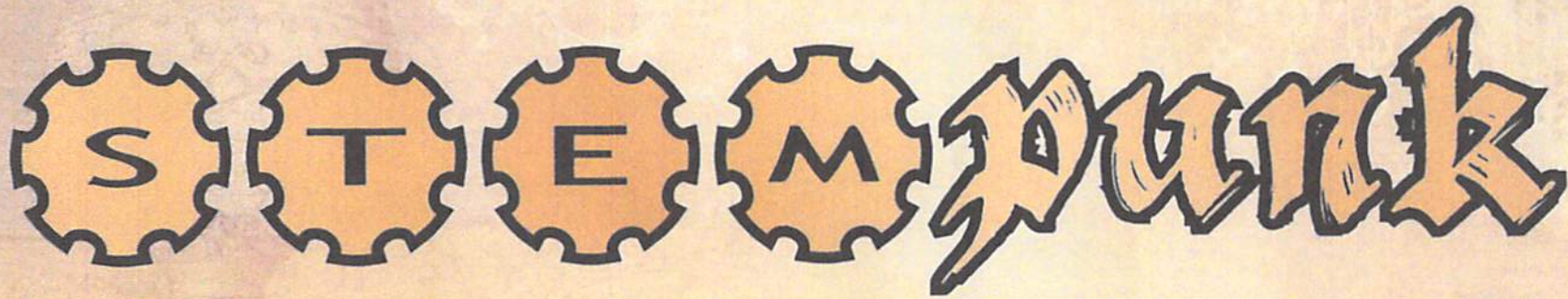
Recognition of

Science &

Technology

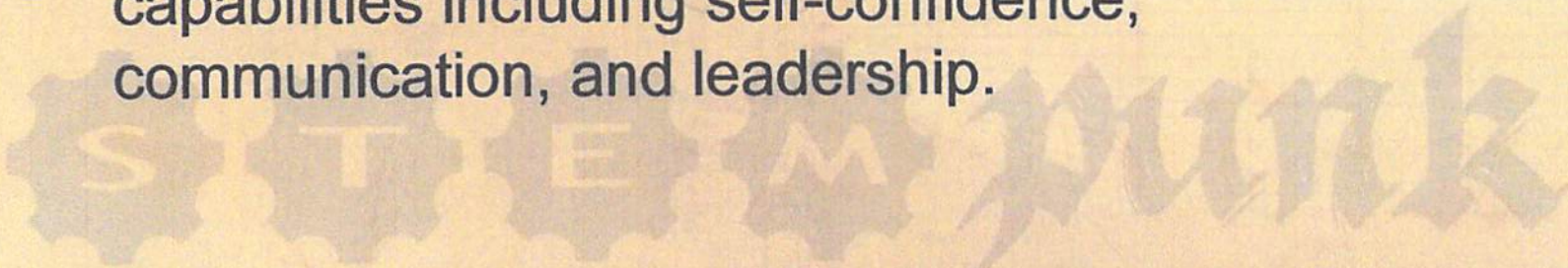
Case Ins, 18-0017





- What is FIRST Robotics?

Our mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering, and technology skills that inspire innovation and foster well-rounded life capabilities including self-confidence, communication, and leadership.



STEMpunk

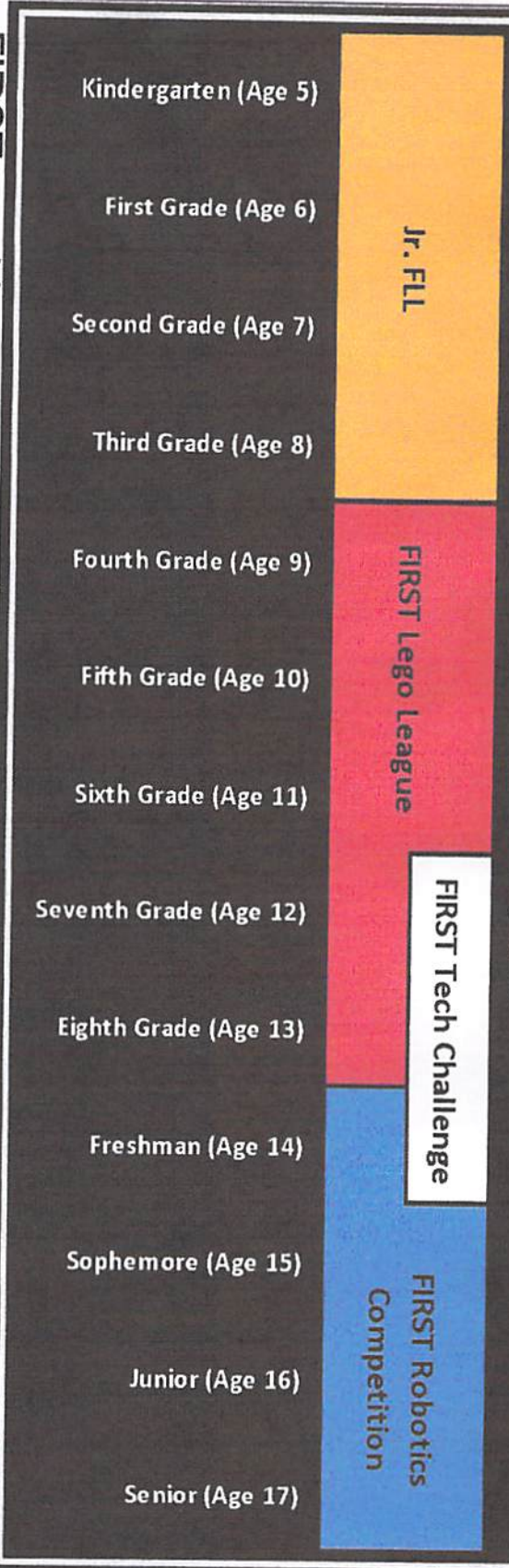
- What is FIRST Robotics?

FIRST is a series of programs that team students with professional mentors to build robots in an effort to get more young people interested in Science Technology, Engineering, the Arts, & Math.

The robot is a byproduct of the process, it is NOT the focus. The focus is the students: teaching them that many more careers are possible than they had ever considered, and gradually giving them control of the program as they develop leadership skills.

Lakeshore FIRST Robotics Program

Progression of Programs



FIRST provides opportunities to learn about **STEM** for students of all ages, beginning in Kindergarten and continuing through high school.

Our goal is to get students interested early and to ensure students have a plan for their growth and learning.

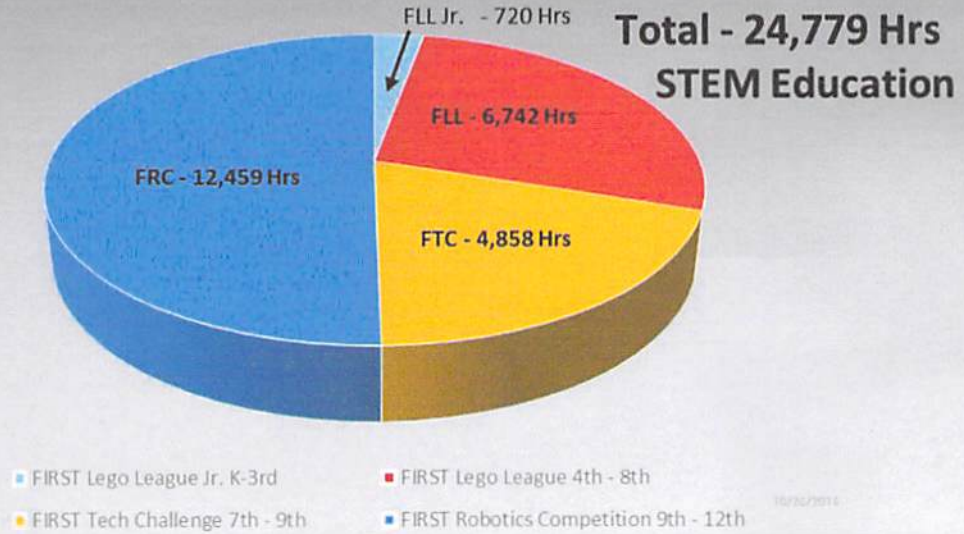
SECRET

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... of ...

STUDENT INVOLVEMENT

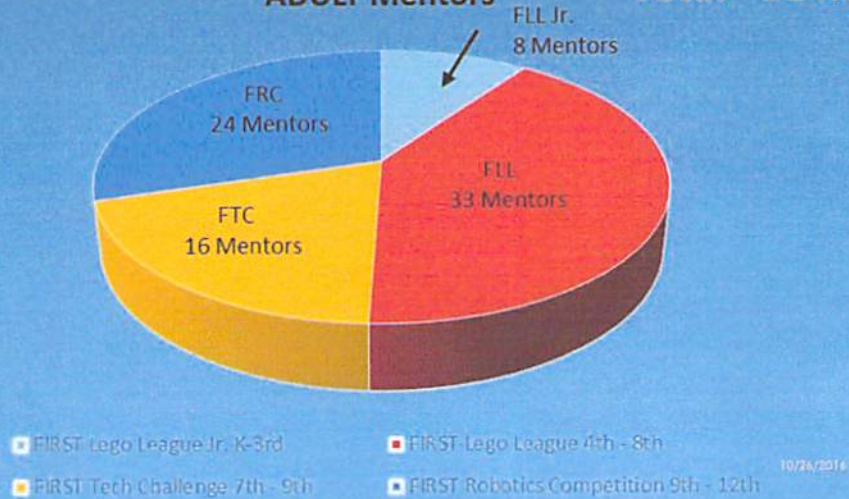
Student STEM Hours by Program (2015/2016)



MENTOR INVOLVEMENT

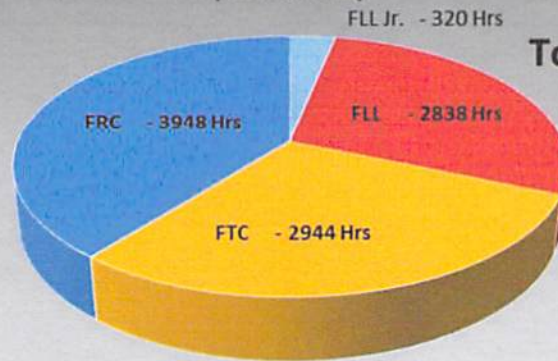
Number of
ADULT Mentors

Total - 81 Mentors



MENTOR INVOLVEMENT

Adult Mentor HOURS (Estimated)



Total - 10,050 Hrs

■ FIRST Lego League Jr. K-3rd

■ FIRST Lego League 4th - 8th

■ FIRST Tech Challenge 7th - 9th

■ FIRST Robotics Competition 9th - 12th

JUNIOR FIRST LEGO LEAGUE - SKILLS

SOFT SKILLS LEARNED

WORKING TOGETHER/IN GROUPS
COMPROMISING/VOTING ON IDEAS
RESEARCH ON COMPUTERS
PRESENTING IDEAS TO ADULTS

TECHNICAL SKILLS LEARNED

VERY SIMPLY GEARTRAINS
VERY SIMPLE PROGRAMMING ON LAPTOPS
CONSTRUCTING WITH TECHNICAL LEGO'S

FIRST LEGO LEAGUE - SKILLS

SOFT SKILLS LEARNED

WORKING TOGETHER/IN GROUPS

REINFORCES COMPROMISE

IMPROVED RESEARCH SKILLS

PRESENTING IDEAS TO ADULTS

GRACIOUS PROFESSIONALISM

FIRST CORE VALUES

TECHNICAL SKILLS LEARNED

PROGRAMMING (SIMPLE TO COMPLEX)

SENSORS USAGE & PROGRAMMING

COMPILED ERROR OF STEPS

ADVANCED LEGO CONSTRUCTION

GEARTRAIN (ARMS/LIFTING CHALLENGE)

CENTER OF GRAVITY

SIMPLE REVISION CONTROL

PROGRAM COMMENTING

FIRST TECH CHALLENGE - SKILLS

SOFT SKILLS LEARNED

WORKING TOGETHER/IN GROUPS

REINFORCES COMPROMISE

PRESENTING IDEAS AT WHITEBOARD

ENGINEERING NOTEBOOK – RECORDING IDEAS

TECHNICAL SKILLS LEARNED

JAVA PROGRAMMING

CAD (COMPUTER AIDED DRAFTING)

3D PRINTING CONCEPTS

PROGRAM COMMENTING & COLLABORATION

SENSORS USAGE & PROGRAMMING

MORE ADVANCED MECHANICAL CONCEPTS

GEARING/TRANSMISSIONS

CENTER OF GRAVITY

WORKING IN SHOP W/SIMPLE TOOLS

FIRST ROBOTICS COMPETITION - SKILLS

SOFT SKILLS LEARNED

WORKING TOGETHER IN LARGER GROUPS

REINFORCES COMPROMISE

WORKING SIDE BY SIDE WITH ADULTS

GRACIOUS PROFESSIONALISM

MARKETING & WEBSITE DEVELOPMENT

PAYING IT FORWARD/VOLUNTEERING

TECHNICAL SKILLS LEARNED

PNEUMATICS IN USE

ADVANCED CIRCUITS (CAN)

MACHINING/LATHEWORK

VISION PROGRAMMING

DESIGNING GEARBOXES TO SUIT NEED

ADVANCED CAD – PREP FOR WATERJET

ADVANCED CAD – PARTS MOVE AS SHOULD

ALUMNI SURVEY RESULTS

44 OF 104 GRADUATES IN MANITOWOC COUNTY

- ON A SCALE OF 1 TO 5 (FIVE BEING BEST) – HOW MUCH DID FIRST IMPACT:
 - YOUR DECISION TO GO TO COLLEGE? AVG OF 3.16
 - SELECTING A MAJOR/MAKING A CAREER CHOICE? AVG OF 3.57
 - YOUR INTEREST IN STEM (SCIENCE, TECHNOLOGY, ENGINEERING, MATH) AVG OF 3.91
 - YOUR SOFT SKILLS, SUCH AS YOUR ABILITY TO SPEAK UP IN A GROUP
OR ABILITY TO WORK IN A TEAM ATMOSPHERE? AVG OF 4.00

ALUMNI SURVEY RESULTS

44 OF 104 GRADUATES IN MANITOWOC COUNTY

- SCHOLARSHIPS DUE TO FIRST \$218,000
 - DIRECT FIRST SCHOLARSHIPS \$106,000
 - SCHOLARSHIPS DUE TO FIRST PARTICIPATION \$104,000
- SIGNIFICANT IMPACT ON DECISION TO GO TO COLLEGE 24 OF 44 54.55%
- SIGNIFICANT IMPACT ON CAREER CHOICE 30 OF 44 68.18%
- CURRENTLY ENROLLED OR COMPLETED COLLEGE 37 OF 44 84.09%
- PURSUING A STEM CAREER 29 OF 44 65.91%
- STUDENTS WHO HAVE JUNIOR MENTORED 16 OF 44 36.35%
 - TOTAL OF 28 SEASONS OF MENTORING FROM 16 STUDENTS PAYING IT FORWARD