

# HOW TO DEVELOP A SCIENCE FAIR: STARTING A SCIENCE FAIR

- **Convincing the Administration**
    - **Inquiry is the heart of the Nature of Science standard found within the current Arkansas Curriculum Frameworks.**
    - **Inquiry is a cornerstone of the Next Generation Science Standards.**
    - **Inquiry is a foundation principle of STEM.**
    - **Conducting a fair costs money to start but will cause the finances of the school to prosper if given time.**
- Other collateral assets are:**
- **You are fostering an interest in science.**
  - **Opening doors of opportunity for students to explore and realize new talents.**
  - **Opening doors to stimulating a “competitive” academic environment within the school.**
  - **Taking your classroom instruction outside of the four walls and applying it to an external issue.**
  - **These positives will “bleed” over into other programs creating an environment of academic excellence within the school.**
  - **New students will enroll with the “School Choice” option.**
  - **Increased revenue due to increased enrollment prompted by an enhanced academic reputation of the school if operated under a sound administration**

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## **“Alpena School Growth Model”**

### ***TIMELINE***

- **1924 – the Alpena Public School system was established.**

### ***63 YEARS LATER***

- **1987 – few academic extracurricular activities offered.**
  - **Athletic programs emphasized resulting in the only true extracurricular opportunity serving a small population within the school.**
  - **School had earned 1 project finalist honor in the National History Day competition.**
  - **School Population – 506 students K-12**

### ***10 YEARS LATER***

- **1997 – few academic extracurricular activities offered.**
  - **Athletic programs emphasized resulting in the only true extracurricular opportunity serving a small population within the school.**
  - **School had earned 1 project finalist honor in the National History Day competition to this point.**
  - **Competitive Science Fair Program is initiated serving all students in grades 7-12.**
  - **School Population – 502 students K-12**

### ***4 YEARS LATER***

- **2001 – more academic extracurricular activities offered.**
  - **Athletic programs still emphasized and still serving a limited population of students.**
  - **FBLA initiates active competition program serving all students grades 9-12.**
  - **FCCLA initiates active competition program serving all students grades 7-12.**
  - **Competitive Science Fair Program experiences award winning growth resulting its 100<sup>th</sup> regional and state awards. Program still serving all students grades 7-12.**
  - **School earns 2 finalist positions in the Intel International Science and Engineering Fair.**

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- **School Population – 502 students K-12**
- **2007 – multiple academic extracurricular activities offered.**
  - **Athletic & Academic programs emphasized serving all students grades 5-12.**
  - **EAST and Arkansas Governor's Quiz Bowl programs initiated serving students in grades 7-12.**
  - **Competitive Science Fair Program experiences continued growth resulting in its 500<sup>th</sup> regional and state awards. Program expanded to serve grades 5-12.**
  - **School has earned 7 Intel International Science and Engineering Fair Finalist positions and 1 observer award.**
  - ***Science program wins its 2<sup>nd</sup> OVERALL STATE CHAMPION award at the state science fair recognizing it as the most powerful school per capita in scientific research at the pre-collegiate level.***
  - **School has earned 3 FBLA national competition finalist positions while serving students in grades 9-12.**
  - **School has initiated a competitive FFA Agriscience Fair competition program that has resulted in \_\_\_\_\_ national finalists. Program serves students in grades 7-12 and provides the opportunity for middle school students to advance to a national competition.**
  - **FFA National Agriscience Fair finalists have produced 3 national champion projects and one national runner-up project.**
  - **Arkansas House of Representatives recognize the cross-curriculum work of the science and agriculture departments with a house resolution.**
  - **Arkansas Senate awards the Alpena Science Program with its second Senate Citation for winning the OVERALL STATE CHAMPION award.**
  - **School Population – 552 students**

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- **Net increase of 51 students resulting in increased revenue of \$250,000 compared to 1997 when the science program was initiated, and fostered, under strong administrative support.**
- **2012 - multiple academic extracurricular activities offered.**
  - **Athletic & Academic programs emphasized and serve the entire school population in grades 5-12.**
  - **Science program experiences continued growth resulting in 1,226 regional and state competition awards won.**
  - **Science program has assisted 12 students to full scholarship opportunities at Arkansas Universities.**
  - **School has earned 17 Intel International Science and Engineering Fair finalist positions and 2 observer positions.**
  - **Science program has had 1 student win an award at the international level.**
  - **Science program has had a finalist in the American Junior Academy of Science Symposium.**
  - **FFA agriscience fair program has earned 79 national finalist positions.**
  - **FFA agriscience fair program recognized as a “Top 10” agriscience high school by National FFA for producing national agriscience fair finalists.**
  - **FFA agriscience fair program has earned 5 national champion awards, 4 national runner-up awards, and 4 national 3<sup>rd</sup> place awards.**
  - **FBLA program experiences continued growth with 6 national finalists.**
  - **FCCLA program experience continued growth with 6 national finalists.**
  - **Arkansas Governor’s Quiz Bowl team has won 1 state championship.**
  - **EAST program has earned “Superior” rating in its national event.**

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- **Arkansas Department of Education recognizes the school Gifted and Talented Program as the best in the state for schools of 1,000 students or less.**
- **FFA Career Development Events Agronomy Team earns its 2<sup>nd</sup> national finalist honor.**
- **School Population – 535 students**
- **Economic downturn and administrative change results in declining enrollment, but the academic reputation continues to thrive resulting in increased school revenue of \$160,000 compared to 1997 enrollment numbers prior to initiation of competitive academic programs beginning with the initiation of the science fair program.**

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- **Convincing the student**
  - **The project should be a required component of the science curriculum.**
  - **Independent inquiry is the topic of the Nature of Science Standard in the Arkansas Curriculum Frameworks.**
  - **Positive aspects from the student perspective:**
    - **Items to put on their college resume that will be used later to apply for scholarships.**
    - **Interview process teaches a vital “life skill” to all students. Everyone will interview for a job someday, hopefully.**
    - **The process emphasizes attention to detail and record-keeping for success.**
    - **Financial awards from the fairs.**
    - **Collaboration with university faculty establishing contacts for future consideration.**
    - **Building a social network with students from other schools.**
- **Items needed to get a fair going:**
  - **Contact with a regional fair director to learn about informative meetings about the science fair process.**
  - **Obtain a copy of the rules of competition for events affiliated with the Intel International Science and Engineering Fair (ISEF) from [www.societyforscience.org](http://www.societyforscience.org)**
  - **Print the student handbook for the students and introduce the process to the students.**
    - **The 1<sup>st</sup> week of school is great with students changing class schedules since students may move from one science class to another. With all classes working on the same thing no one has to “catch-up” with a class change.**

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- **Divide the project components into “digestible” pieces. The process can be overwhelming. An example may be like this for a timeline:**
  - **August**
    - **research idea**
  - **September**
    - **research plan and forms**
  - **October-December**
    - **experimentation and data collection**
  - **January**
    - **abstract and visual display construction**
  - **February**
    - **local science fair**
  - **March**
    - **regional science fair**
    - **state science fair**
  - **May**
    - **ISEF for qualifying finalists**
- **Obtaining a facility**
  - **Gymnasiums are the best option for a school fair.**
    - **Many tables are needed to display the projects.**
- **Inviting judges**
  - **People with scientific backgrounds are terrific.**
  - **County extension and 4-H people are terrific.**
  - **Have a hospitality area for the judges.**
  - **Give the judges feedback on student performance from the local fair and for those students that compete later in the regional fair, or beyond, to encourage them to return the next year.**

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- **HAVE AN AWARDS CEREMONY**
  - **Parents love to see their children recognized.**
  - **17 individual categories and 1 team category = 18 categories**
  - **3 awards x 18 categories = 54 students get recognized and LOTS of happy parents.**