

Presentation Title: Middle School Forensic Fire Investigation 101 - To reduce youth set fires.

I. Formative Evaluation – Planning

In 2010, a risk assessment covering ten years of Spokane Valley Fire Department’s incident data showed youth set fires were up 20%. In 2011, data from the National Fire Protection Association (NFPA) showed that youth were responsible for 44% of intentional fires nationally. Data showed fires set by children under 13 have been declining, and fires set by those 13 to 17 years of age were increasing, accounting for 74% of youth-set fires or one in four intentional fires. Our department numbers were a little lower, averaging one in five, but the number was trending up. Stakeholders, including local principals, teachers, and our fire department, were presented with the data and a science-based fire education program with a long-term goal of reducing the number of fires set by children and a short-term goal of making science fun.

The stakeholders decided the program best aligned with the science classes curriculum, and a pilot of eighth-grade classes in two middle schools began in the spring of 2011. The course took 50 minutes and involved 20 to 30 students at a time. In 2012, more children were taught, including seventh- and eighth-grade students. In addition, educators continually evaluated and modified the program using feedback from the expanding age groups.

The program is founded on the Scientific Method for fire investigations, as it demonstrates how to determine the cause of a fire. The program stresses people should respect fire, and to prevent fires, we must make better choices. Students learn that collecting data and analyzing it before committing to an action will help prevent fires.

II. Process Evaluation – Implementation

In 2012, instructors presented to 49 classes, 1,391 students in grades six, seven, and eight, in four schools. In 2013, the instructors reached 1,000 students at six middle schools in seventh and sixth grades.

Student surveys showed the need for another adjustment. For example, one of the questions asked was, “Have you lit something on fire for fun?” Almost 50% of eighth-graders and 43% of seventh-graders responded yes, while the number of sixth-graders answering yes was 26%. With the program designed to stop this behavior, we decided to shift focus to sixth-grade students. By lowering the focus grade, the program would eliminate the behavior earlier.

III. Impact Evaluation – Short-Term Results

We constantly evaluated the program during the ten years of presentations (350+ classes and 9,316 students). To see how much information students retained, we conducted in-person surveys of 5% of 8th-grade students. Teachers asked students to write thank you cards detailing something they learned and their favorite part of the class as a post-class assessment. A consistent average of 30% to 40% remember the story of the 14-year-old starting a fire. The same percentage recalls the “fire is a choice” portion of the program. More than 80% remember the negatives of playing with fire. In addition, we interviewed teachers after each class. Teachers consistently reported seeing children participate that generally didn’t get involved.

IV. Outcome Evaluation – Long-Term Results

From 2001-2010, 46 teenagers were identified as starting fires. From 2011-2020, the number dropped to 20. The first five years of data show an average of four teens per year starting fires, and the last five years of data show an average of one teen per year, essentially stopping the rise that began in 2002. Overall, structure fires are down 12%, wildfires down 16%, car fires down 26%, and rubbish fires down 9%.

To date, only three of the 9,316 students in the program have been identified as lighting fires. The local population is up 30%, and the call volume has more than doubled in the last 20 years, but fires remain down among all youth age groups.

Conclusion: This type of program will have more success if it is engaging and interactive. One of the biggest challenges for this age group is getting and holding their attention. Youth need to be engaged, and the lesson must be relevant. The “why” must be stressed. Why is it important to them? Why should they care? Why can it make a difference in their lives? Make it relevant, and they will learn!