



Assessing Interest and Needs of Indiana High School Ag Teachers for a Turfgrass Curriculum

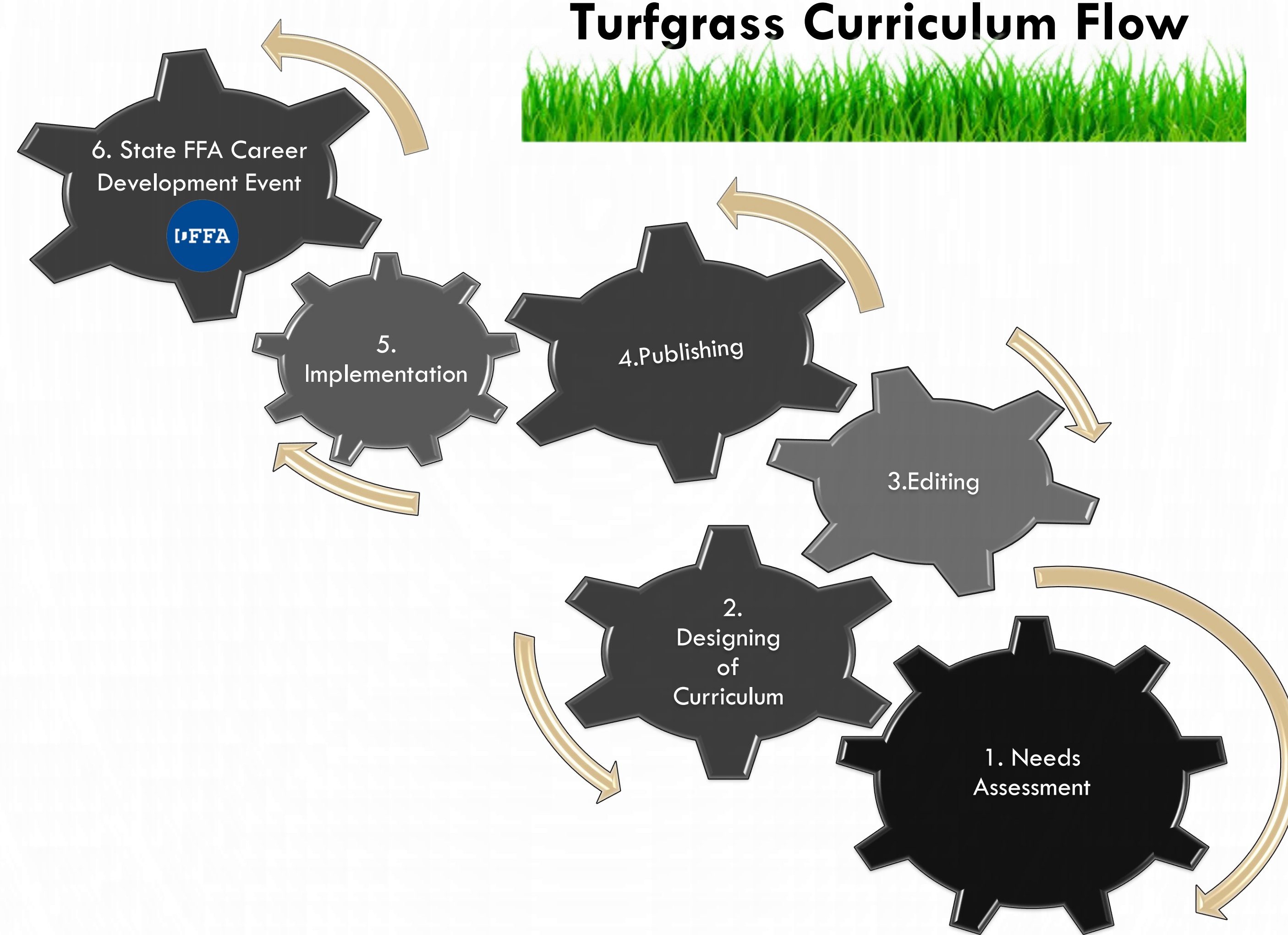
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Introduction

- Rationale**
 - The turfgrass industry is a multifaceted part of the green industry that has a wide variety of career opportunities available for those that desire to pursue a career. Jobs include but are not limited to: golf course superintendents and personnel, sports field managers and field staff, lawn and landscape companies, academia, sales and consultation, and more.
 - Prior to the COVID-19 pandemic, retirements within the industry were at an all time high. Rates of students enrolled in four year turfgrass programs were also at an all time low.
 - The pandemic magnified the problem even further and created a dire need of future green industry employees.
 - Universities had to turn to untapped resources for their programs and Purdue's turfgrass program has identified FFA as a potential source.
 - A turfgrass curriculum has never been designed before for high school students and our project was the first of its kind for the state of Indiana. Therefore, literature reviews for the subject of developing a turfgrass curriculum are nonexistent.
- Questions.**
 - Our research basis revolved around the following questions:
 - Do Indiana high school ag teachers want or need a turfgrass curriculum?
 - What materials do the teachers need to be able to teach the curriculum?
 - What do we need to teach the teachers to be able to teach a turfgrass curriculum?
 - How can we evolve the turfgrass curriculum into a career development event (CDE)?



Conclusions and Future Plans

- The data indicates that a turfgrass curriculum is needed for agriculture teachers in Indiana based upon the felt need from both parties involved with the needs assessment.
- A 6 week introductory course for high school aged students is the starting point for the researchers.
- The goal for the turfgrass curriculum is to become a career development event in the state of Indiana that will be hosted during FFA state days. The researchers hope to pilot the program in Indiana and work it into other states that haven't developed curriculum that is similar.
- The researchers also want to update any curriculum that is out of date. With the addition of the career development event (CDE), the curriculum development program would be an effective way to recruit students into Purdue's turfgrass management program.

How it Works

- Needs Assessment**
 - A state wide needs assessment was conducted to allow the researchers to find out what is needed the most in designing the curriculum.
 - The assessment was conducted using Qualtrics and sent out via anonymous email.
 - The assessment contained a variety of questions. These topics ranged from: Lawn Care and Landscape, Turfgrass Basics, Fine Turf (Golf Courses and Sports Fields) and Turfgrass Industry Knowledge.
- Designing of Curriculum**
 - The curriculum was set up in six separate modules based upon the week.
 - Modules of curriculum include:
 - Turfgrass Basics
 - Turfgrass Nutrition
 - Turfgrass Diseases, Weeds, and Insects
 - Irrigation, Drainage and Soils
 - Turfgrass Careers
 - Case Studies
 - The curriculum can be implemented into the new Indiana career and technical education Landscape and Turfgrass career pathway.
 - The curriculum meets the standards set forth by the state's department of education for the Landscape and Turfgrass pathway.
 - The curriculum can be used in classes similar to the landscape and career pathway.
- Editing of Curriculum**
 - Once the curriculum was created, we asked for feedback from a select few FFA Educators and experts.
 - The feedback determined if we add, delete, or keep some of the content.
- Publishing of Curriculum**
 - A pilot test is being conducted amongst four FFA programs that have volunteered their time.
 - The finished product will be made available for all instructors to have access to after piloting.
- Implementation of Curriculum**
 - Instructors will be able to teach the curriculum we designed through the use of a turfgrass curriculum kit (Figure 1.).
 - The kit includes:
 - Turfgrass seeds
 - Irrigation equipment
 - Turfgrass weeds poster
 - Lab materials for labs 1 and 2
 - Insect samples
- Career Development Event Implementation**
 - A career development event (CDE) will be added to FFA state days and competitions.
 - The CDE will be modeled after other states CDE's.
 - Indiana's turfgrass CDE will count towards the 21 states needed to start a national FFA turfgrass CDE

Figure 1: Turf Curriculum Kit



- The needs assessment was approved by the Purdue Institutional Review Board (IRB)
- 300+ agriculture teachers in Indiana were sent a needs assessment survey through Purdue's Qualtrics survey system.
- Researchers received 46 completed surveys.
 - An additional 23 surveys were started but left incomplete.
- 41 of Indiana's 92 counties are represented in the survey (Figure 2.)
- Teachers with teaching experience of 1 year to 40 years completed the survey.
 - 40% of the completed surveys were by teachers with 1 to 5 years of teaching experience (Figure 3.)
- The researchers found that 25 out of 46 teachers were interested in teaching turfgrass and urban horticulture but didn't have the resources to do so (Figure 4.)
- 28 out of 46 teachers knew of turfgrass careers potentially available to their students (Figure 5.)
 - 11 of 46 teachers knew salary ranges for careers in the turfgrass industry (Figure 5.)
 - 9 of 46 teachers knew where to find turfgrass job postings for their students (Figure 5.)

Results to Date

- In a Likert scale with ratings from 1 (completely disagree) to 10 (completely agree) researchers found on average that (Figure 6.):
 - 6.935 agreed that turfgrass is a career pathway widely untouched by FFA and agriculture teachers.
 - 8.435 agreed that urban agriculture is becoming more important for their students to learn.
 - 6.826 agreed that students would like to learn more about turfgrass and urban agriculture.
- In a ranking scale of comfortability on teaching topics with 1 being the most comfortable and 8 being the least, researchers found on average that (Figure 7.):
 - Turfgrass identification ranked at a 5.556 (least comfortable).
 - Hardscaping and water features tied for the second least comfortable topic with a 5.326 average ranking.
 - Irrigation ranked the fourth highest at 5.022.

Figure 3: Response vs Years Teaching in the Turfgrass Needs Assessment

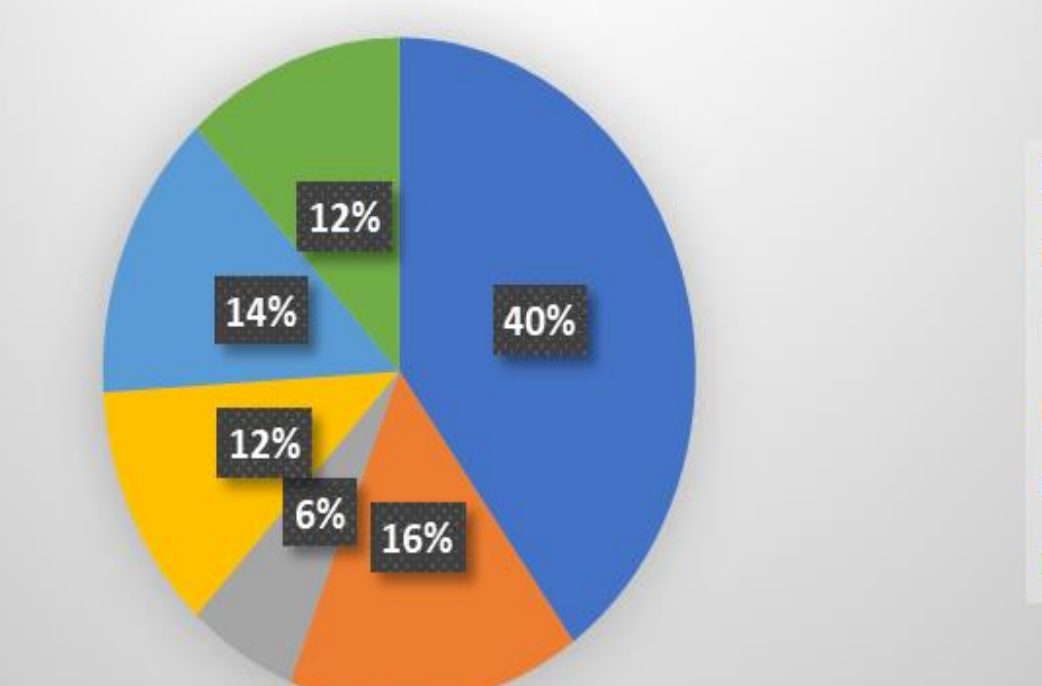


Figure 4: Interest in Teaching Turfgrass and Urban Agriculture

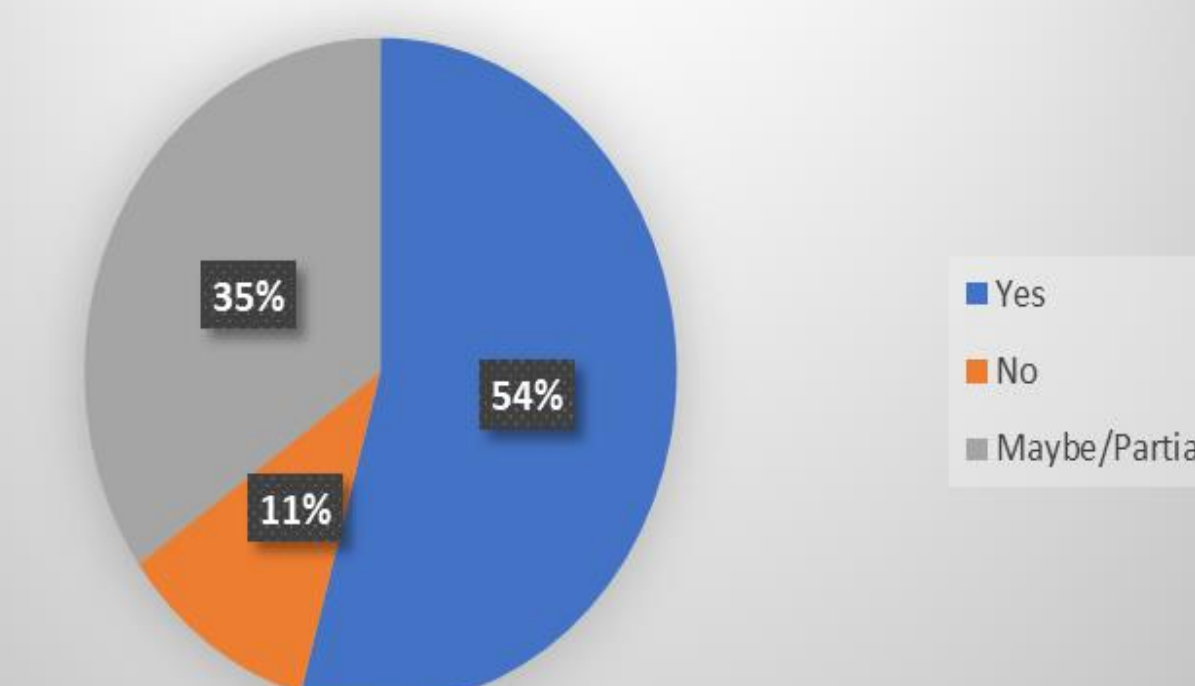


Figure 5: Turfgrass Career Awareness



Figure 2: Participating Indiana Counties in the Turfgrass Curriculum Needs Assessment

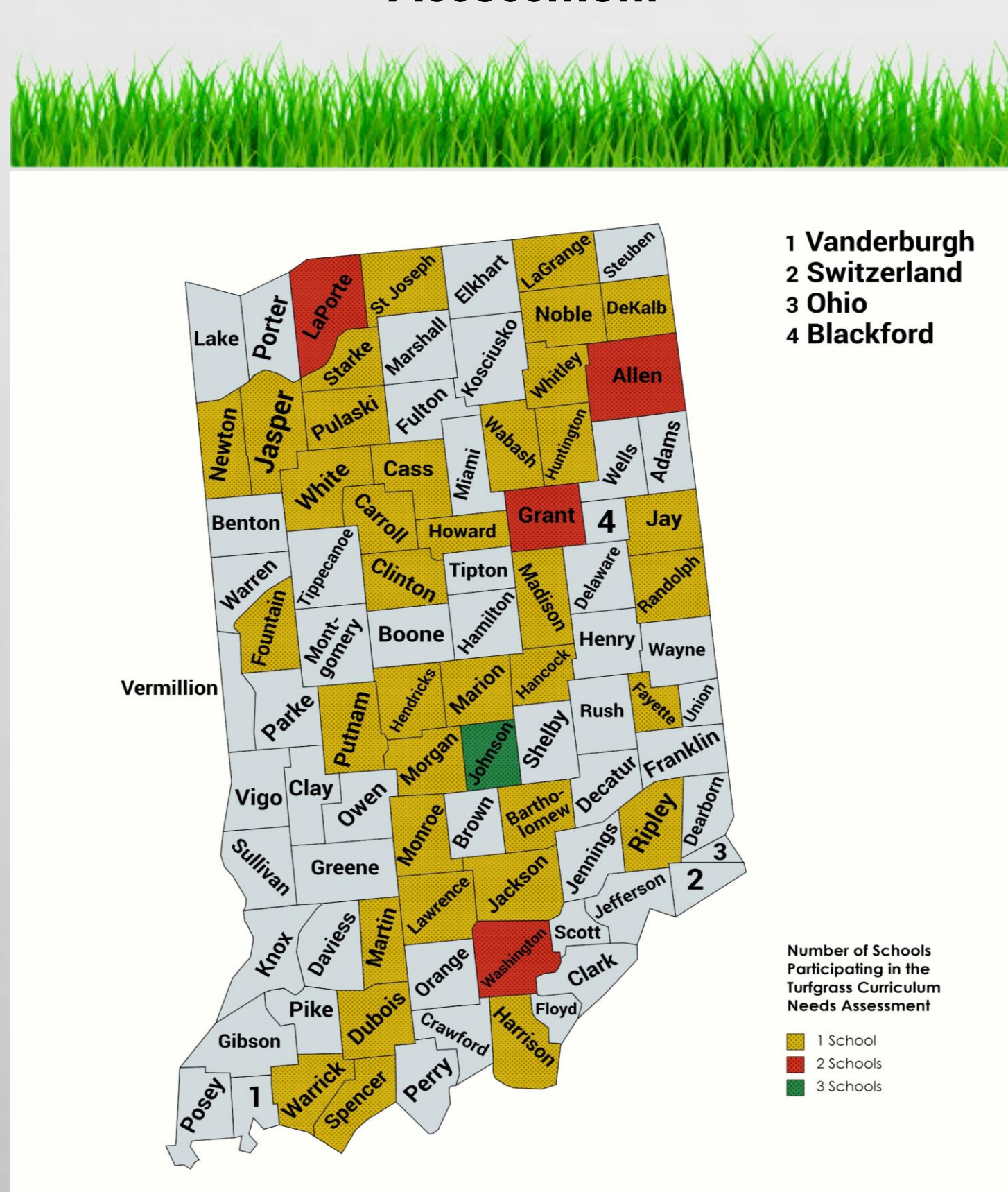


Figure 6: Teacher Career Exploration

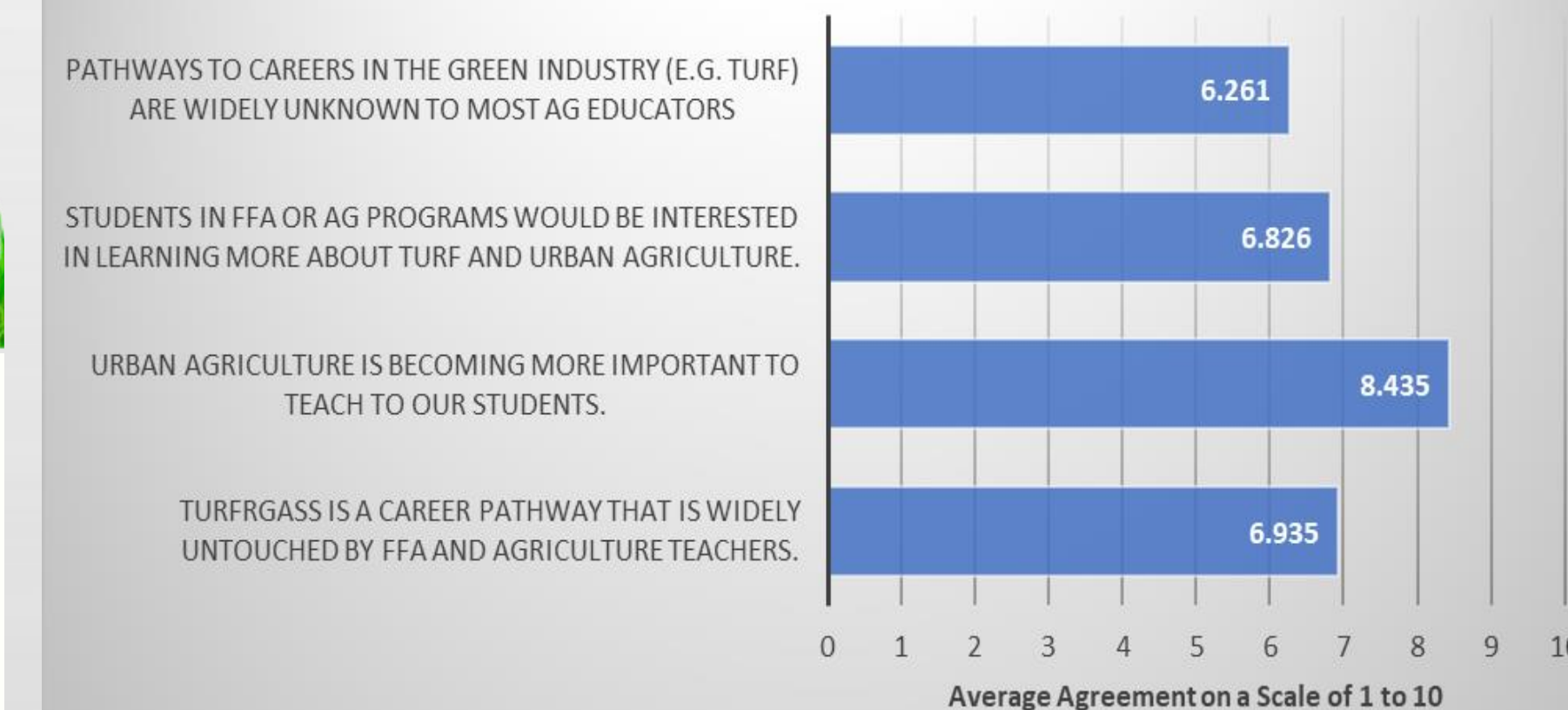
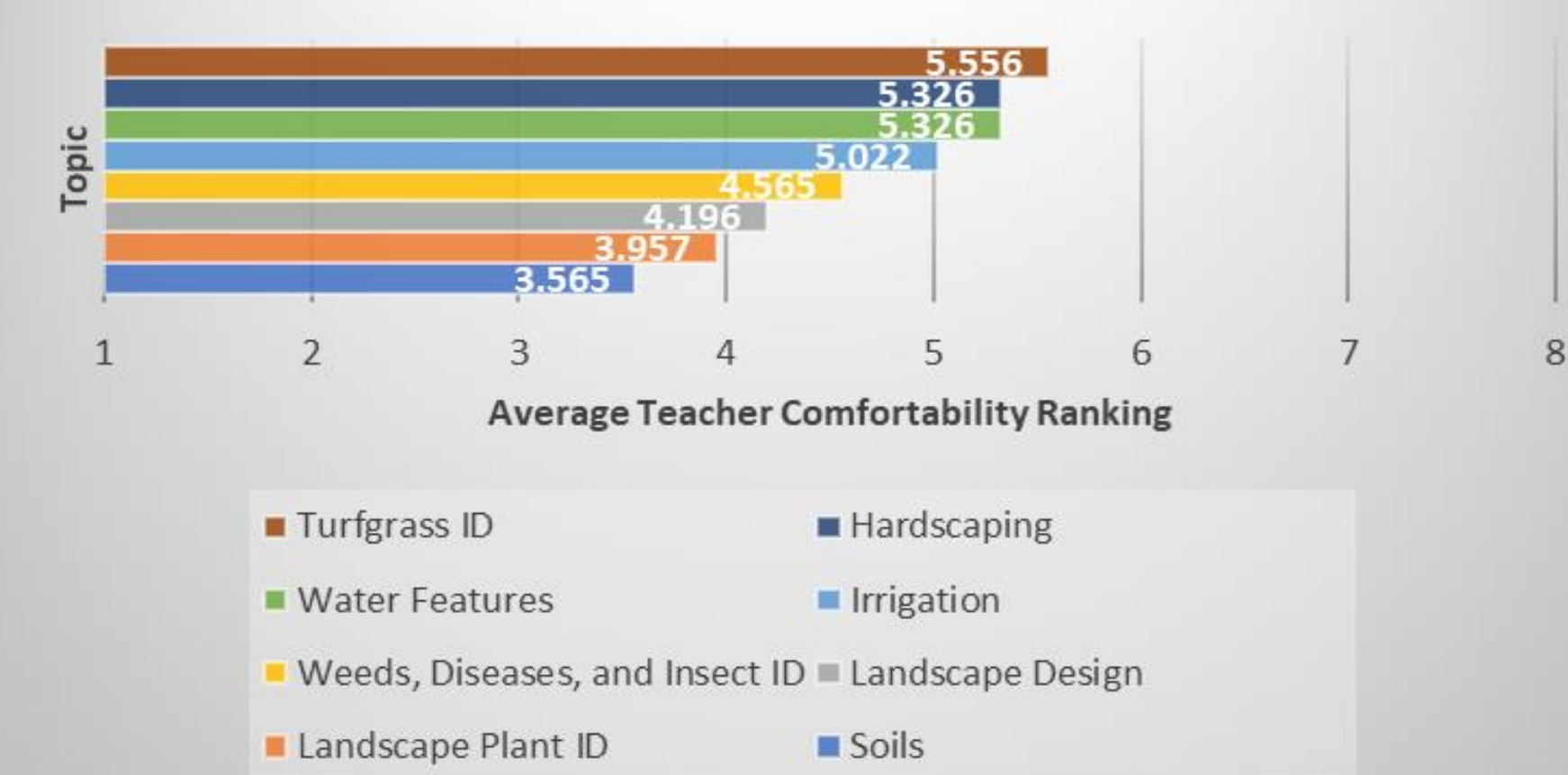


Figure 7: Teacher Topic Comfortability



Costs and Resources Needed

- The needs assessment of the curriculum is free and won't need any resources dedicated to it besides time.
- The cost of the turfgrass curriculum bundle and teaching kit was \$178.16 per kit.
- The curriculum bundle includes: Samples of various turf items, pictures for classroom activities, resources to access other published turfgrass content, quizzes, and lab protocols.

Acknowledgments

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