SCHOOL VACCINE EDUCATION PROGRAM FINAL REPORT – SPRING 2022 PILOT

Report submitted July 28, 2022

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THE FRANKLIN INSTITUTE

SCHOOL VACCINE EDUCATION PROGRAM

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Executive Summary:

In February 2022, The Franklin Institute, in partnership with the National Nurse-Led Care Consortium (NNCC), launched the School Vaccine Education Program (SVEP) to develop toolkits for supporting elementary school-based nurses in delivering educational programs about COVID-19 vaccines to school communities. The goal of the SVEP was to strengthen nurses' expertise in educating elementary school students, with age-appropriate information from a trusted source, about the science of how the SARS-CoV-2 virus can make them sick and how vaccines work to protect them.

The pilot cohort included ten nurses, who represent nine schools in Philadelphia and one in south central Pennsylvania that serve economically disadvantaged communities and other underserved populations. Nurses helped to shape the development of the program through discussions to ensure that the content addressed their communities' questions and concerns, that program tools could be feasibly integrated into their practice, and that training supported their needs. The project team adapted existing educational resources about vaccines into five types of tools: 1) hands-on activities, 2) letters to families, 3) videos and scripts, 4) a one-page flyer, and 5) graphic communication assets. Through training, nurses were then equipped with evidence-based conversational strategies for building vaccine confidence, facilitation strategies for inquiry-based learning, and emerging data on vaccine development and efficacy in children.

Nurses implemented the toolkit at their schools in May and June, then shared their experiences through a short survey and reflective discussion. Their feedback demonstrated that the high-quality resources enabled programming in multiple formats for different audiences, toolkit programs were engaging and educational, the training supported nurses in delivering, adapting, and extending educational tools, and that the toolkits helped nurses build community vaccine confidence at a critical time. All resources were used, and all cohort members reported that they planned to continue using the toolkit in the future. Nurses perceived that their toolkit programming had a positive influence on community vaccine confidence; most directly, two nurses who held vaccine clinics at their schools during the implementation period felt that the communication channels opened by the toolkit programs directly influenced families' decisions to get their children vaccinated.

Future directions for the SVEP may include developing new tools for preschool-aged children to embed programming in kindergarten readiness initiatives and expanding the program to a national scale. In the longer term, the model of building the capacity of school-based nurses to lead health education initiatives, using best practices of informal science education, could be applied to a variety of other topics. The outcomes of the SVEP pilot demonstrate that, with appropriate tools and training, nurses enjoy, build expertise, and feel empowered by being leaders in innovative health education for the wellbeing of their communities.

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Project Overview:

In February 2022, The Franklin Institute, in partnership with the National Nurse-Led Care Consortium (NNCC), launched the School Vaccine Education Program (SVEP) to develop toolkits for supporting elementary school-based nurses in delivering educational programs about COVID-19 vaccines to school communities. Recognizing the critical role of school-based nurses as trusted community health professionals during the COVID-19 pandemic, the Institute and NNCC aimed to offer a valuable professional development opportunity to empower nurses as leaders in school vaccine education.

The goal of the SVEP was to strengthen nurses' expertise in educating elementary school students, with age-appropriate information from a trusted source, about the science of how the SARS-CoV-2 virus can make them sick and how vaccines work to protect them. To ensure that resources supported the needs of and effectively built the capacity of nurses to engage their communities, the project team recruited a cohort of school-based nurse partners who guided resource development, ran pilot activities in schools, and evaluated program impact. Implementation activities led by the cohort offered unique STEM learning experiences for students and families and positively influenced community vaccine awareness and confidence, serving as a model for potential future expansion of the project.

Project Partners:

The novel approach of the SVEP was inspired by the complementary expertise of the project partners in informal science education and nurse-led healthcare. As one of the leading science centers in the country, The Franklin Institute provides local and national audiences with educational resources in their own neighborhoods through hands-on activities in classrooms, programs in community venues, and through ways to interact online. Institute educators have extensive experience with the value of inquiry-based STEM experiences for learners of all ages to make connections with science. NNCC's reach also extends nationally, offering various training and technical assistance activities to a network of nursing professionals working at the frontlines of care. Throughout the COVID-19 pandemic, NNCC has strived to support nurses with vaccine information, provide learning opportunities, and elevate the voices of everyday nurse champions. Funding for the SVEP was provided through NNCC's cooperative agreement with the Centers for Disease Control and Prevention (CDC) to reinforce confidence in the COVID-19 vaccines by building trust, empowering healthcare personnel, and engaging communities and individuals. During the pilot project, Franklin Institute staff led content development, training, production of physical and digital materials, and front-end evaluation. NNCC staff coordinated all project administration and cohort communication, along with advising and reviewing toolkit content for alignment with public health guidance.

Cohort Recruitment and Selection:

The opportunity to participate in the pilot cohort was promoted through email announcements to NNCC's statewide network of nurses in Pennsylvania. The online application form requested information about each applicant's individual demographics, school location and environment (urban, suburban, or

rural), observed level of vaccine confidence in the school's community, and any key underserved populations served by the school. The application also included a letter to school principals outlining the purpose and scope of the project; nurses were required to obtain their principal's approval to apply. The commitment required for the project was defined as not to exceed a total of 12 hours between March 1 and June 30, 2022, with responsibilities including two 60-minute virtual advisory meetings (March and June, outside of school hours), one 90-minute virtual training (April, outside of school hours), and implementation of at least two school programs between April and June. A stipend of $1,000 was offered to each selected cohort member in recognition of the time and resources needed to actively participate in the project.

Thirty-two applications were received, of which twenty-eight were from schools in Philadelphia. The other four applications included two schools in the Philadelphia suburbs and two other urban schools outside of the Philadelphia area. Among the ten nurses selected for the cohort, 60% identified as a racial or ethnic minority (40% Black/non-Hispanic, 20% white/Hispanic, and 40% white/non-Hispanic). They represented a mix of public and non-public schools (8 public, 1 parochial, 1 independent), including nine schools from different neighborhoods in Philadelphia and one from Lebanon (an urban area 88 miles west of Philadelphia). The cohort was also selected to represent a variety of perceived reasons for low vaccine confidence, including safety concerns, a lack of understanding of the benefits of vaccination, historical and cultural mistrust of medicine, lack of health insurance and access to healthcare, language barriers to accessing reliable information, and the influence of misinformation on social media. A final factor used in selection was the identification of critical underserved populations who would be reached through the project. Among the cohort's schools, all served economically disadvantaged communities, while some also included unhoused families, communities underserved by healthcare, students enrolled in special education programs, immigrant communities with limited English proficiency, and neighborhoods being affected by gentrification.

Toolkit Development:

Planning

A virtual planning meeting with nurses was held in late March to shape the development and design of the toolkit. One area of discussion that helped to inform the messaging of the toolkit focused on questions and concerns that nurses were hearing in their communities. Nurses observed that families seemed to have more concerns about vaccinations for younger children (compared to higher rates of vaccination among middle and high school students), based on perceptions of inadequate safety testing, concerns about long-term effects, and the perceived lower health risks of COVID infection for this age group. They heard questions about and saw gaps in following the full childhood vaccination schedule as well, especially among new immigrant families, and often dealt with exemptions and perceived loopholes enabling noncompliance. They also shared that COVID-19 vaccine information from experts rarely felt personalized—whether through language translation or cultural context—for their communities, resulting in a lack of access and trust and ceding authority to social media. Among promising trends, the nurses had begun to see positive change in perceptions of vaccination over time, as early disbelief and anger over lockdowns began to fade. They also noted that school policies instituted by the School District of Philadelphia regarding masking, quarantining, and participation in activities were motivating factors for vaccination, reinforcing the importance of the school community in family decision making.

A second area of discussion focused on the practical aspects of toolkit design. In what contexts did nurses engage in vaccine education and communication? What types of resources would be the best fit? The project team started by sharing three existing resources developed by the science museum community for potential adaptation and inclusion in the toolkit. Rather than developing original activities, adaptation of these resources would accelerate the deployment of the toolkit, making it possible for the cohort to implement the materials and provide feedback before the end of the school year in June. These included **"Vax Facts" flyers** with simple, accurate, and engaging information about vaccines (developed by The Franklin Institute) and a **hands-on activity about herd immunity** (developed by the Pensacola MESS Hall), both created through the *Communities for Immunity* initiative established by CDC and the Institute of Museum and Library Services. In addition, a simple **coronavirus structure model** (developed by the WonderLab Museum of Science, Health, and Technology) had been shared through the National Informal STEM Education Network. Nurses envisioned that these hands-on activities—along with guides outlining learning objectives and facilitation methods—would be useful in both small group and classroom settings, while an easily reproduced flyer could be distributed at school events. They brainstormed programming for events scheduled for the end of the school year as well as additional formats for content that could be organically integrated into their practice, including videos for in-person and virtual programs, customizable video scripts, and informational templates for email and other classroom communications.

The final topic of discussion at the planning meeting was to identify priorities for training to equip nurses with the skills and information that would be most helpful. The highest priority was training in facilitation strategies for interactive learning, since nurses do not always serve the role of an instructor or facilitator. They were also interested in learning about the latest evidence on vaccines from clinical trials and research studies, especially as pediatric vaccines for children 5 and under were undergoing review, and conversation strategies for addressing misinformation. Given their expertise, the nurses did not feel that they needed any additional training on the science behind different vaccines.

Production

Based on the discussions at the planning meeting, the project team moved forward with producing five types of tools: 1) hands-on activities, 2) letters to families, 3) videos and scripts, 4) a one-page flyer, and 5) graphic communication assets. Templates for letters and flyers were translated into six additional languages identified by the cohort: Spanish, Russian, Ukrainian, Arabic, Khmer, and Simplified Chinese (video subtitles are in progress). Examples of toolkit materials are included in Appendix A. All materials and supplies needed for each activity were packaged and shipped to nurses, while all digital resources were shared through Google Drive.

Hands-on activities. The project team adapted the existing resources mentioned above to develop two activities called "How Vaccines Work" and "Why Vaccines Matter" (Figure 1). Thanks to their prior implementation by multiple science museums, the efficacy of the core activities was well established, allowing the team to focus on developing scripts and facilitation prompts to support nurses in their delivery of the activities. A card-based variation for large group audiences was added to "Why Vaccines Matter" to support nurses who planned to lead classroom programs for older elementary students. A guide was created for each activity, including learning objectives, materials list, step by step facilitation instructions with inquiry and discussion prompts, and a brief science explanation.

Letters to families. Recognizing that in-school classroom programming represented a unique STEM learning opportunity for students, the project team developed a letter that nurses could send to families afterwards. The letter included an explanation of what children had learned, suggestions for continuing the conversation at home, and encouragement for families to follow up with the nurse with any questions about vaccination.

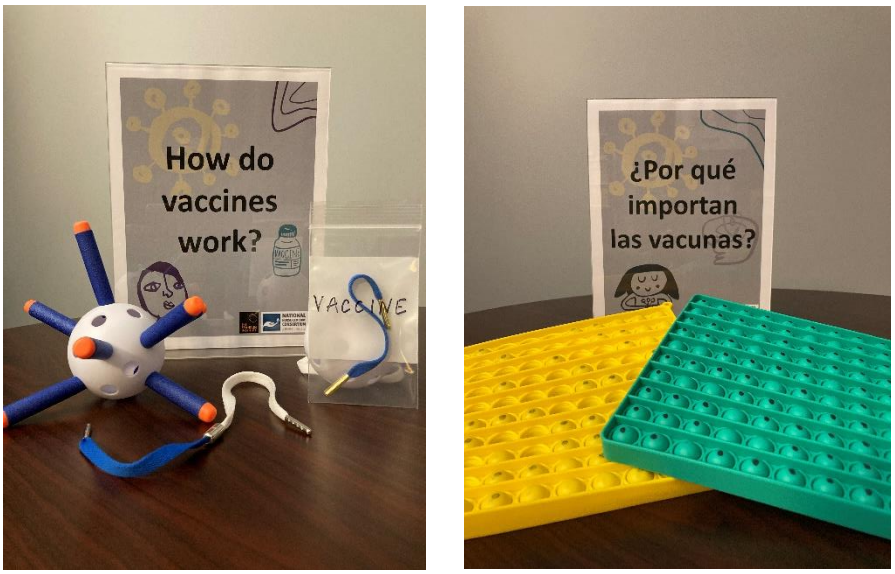


Figure 1. Hands-on activities in the toolkit included "How Vaccines Work" (left) and "Why Vaccines Matter" (right). Adapting existing resources allowed the toolkit to be rapidly deployed and tested by the pilot cohort of nurses.

Videos and scripts. The project team adapted each of the hands-on activities into a short video that nurses could play in school or share in digital communications. The script for each video was also shared with the nurses, allowing them to record their own versions.

One-page flyer. The project team converted the existing "Vax Facts" flyer into a grayscale, 8.5" x 11" PDF format that could be easily personalized with a nurse's contact information, then photocopied and distributed as needed. Messaging was modified to address common concerns raised during the planning meeting, including emphasizing the benefits of vaccination in preventing serious illness and extensive safety testing.

Digital communication assets. For The Franklin Institute's prior *Communities for Immunity* project, the Institute's graphic designers had developed a design style that employed muted colors, hand-drawn illustrations, and culturally appropriate imagery to convey health information with warmth and approachability. The project team applied this style to develop additional digital assets with short vaccine facts and messages, sized for email signatures and Class Dojo or other communication apps.

Training:

A 90-minute virtual training session was held with the cohort in late April to introduce nurses to the final toolkit materials. The first segment of the training focused on evidence-based conversational strategies for building vaccine confidence, drawing on insights from social science research and techniques of

motivational interviewing. Nurses were also introduced to the "truth sandwich," developed by linguist George Lakoff, as a tool for addressing myths and misinformation by briefly addressing a false statement in between two truthful statements. The group collectively practiced examples of crafting truth sandwiches to address COVID vaccine-related misconceptions (e.g., "the vaccine is risky because mRNA technology is new and untested") as well as other common health myths (e.g., "you can catch a cold when you're feeling cold").

In the second segment of the training, nurses were introduced to The Franklin Institute's "Core Four" facilitation strategies: 1) ask questions, 2) encourage scientific thinking, 3) cultivate rich dialogue, and 4) make connections. Educators introduced the two hands-on activities and modeled how to facilitate them with an imaginary audience of children, as the nurses were challenged to identify how the Core Four strategies could be used. The nurses were then split into smaller groups to practice leading the activities with and offering feedback to each other, using the activity materials they had received in advance.

The training session closed with a walkthrough of the digital communication resources as well as a brief update on new CDC data on vaccine efficacy in children and the status of vaccine trials for children aged 5 and below.

Implementation and Outcomes:

High quality resources enabled programming in multiple formats for different audiences

Nurses implemented the toolkit at their schools in May and June, then shared their experiences and offered feedback through a short survey and through participation in a virtual group reflection meeting (or individual phone calls as needed). Within a compressed implementation timeline in May and early June before the end of the school year, the cohort estimated that their programs reached approximately 850 people, with the majority reaching 50-100 people each. Nine of the ten nurses conducted student-only programs for children in grades K-6 in school or afterschool settings, while five conducted programs in family settings or targeted to adult parents and caregivers. Several nurses faced logistical constraints in scheduling classroom programming at the end of the school year, finding more flexible opportunities with small groups in out-of-class settings. All cohort members reported that they planned to continue using the toolkit in the future.

"The toolkit allows you to engage the child and parent."

In the survey, nurses were asked to indicate which of the resources they used (hands-on activities, videos, video scripts, letters to families, one-page flyers, email graphics, messaging app graphics, and truth sandwich strategy) and to rate how valuable they found each resource. At least seven out of ten nurses used each type of resource (all ten used the hands-on activities, letters to families, one-page flyers, and email graphics), and 97% of ratings (68 out of 70 responses) characterized the resource as "extremely" or "very useful." These results demonstrate that the toolkit components were well suited for the cohort's programming plans, and that nurses felt the resources were high quality.

The cohort described creative uses of the toolkit in these different settings, such as:

- Leading programs in individual classrooms.

- Displaying hands-on activity materials at the nurse's station during the end-of-year Field Day.
- Making hands-on activity materials available for exploration in the nurse's office during routine hearing screenings for small groups of children.
- Sending home flyers in different languages or presenting activities and videos in grade band assemblies prior to school vaccine clinics.
- Presenting activities and videos in afterschool programs.
- Filming their own version of the videos to share with families.
- Adapting the toolkit information to a slideshow for a virtual presentation for families.

Toolkit programs were engaging and educational

Nurses reported that the novelty of the activity materials, the visual and tactile elements of the interaction, and the connections between the materials and science concepts created positive learning experiences for students. They felt that the supplies were age appropriate and piqued students' curiosity. Even outside of formal programming, the eye-catching materials and interactivity sparked "mini lessons" and organic conversations, both among students and adults, when nurses displayed them in their health rooms or other locations. As one nurse said, "I have many interactive items that I utilize in my office for teaching purposes. I really enjoy hands-on things as much as the children who are learning from them!"

"Students hear the words 'vaccine' and 'virus,' but don't have anything to visualize. After the How Vaccines Work lesson, students had an 'aha' moment with COVID virus and vaccines and actually commented, 'Now I get it.'"

With respect to cognitive understanding, nurses were encouraged by the prior knowledge that students demonstrated through inquiry-based facilitation. For example, in one school, students were already aware of what the virus looked like, so it was easy to make connections with the model. In another school, a nurse recounted that a class of third graders surprised her by engaging "like little doctors" as they were eager to talk, share, and ask questions. As a third example, a nurse found that "How Vaccines Work" caught the interest of an older group of students and helped them to connect the virus to actual behaviors like wearing masks correctly. Overall, nurses felt that both activities led to increased understanding and worked well together. However, they had mixed experiences in presenting the virus model to the youngest students; while one reported that a few children were afraid to touch the ball thinking they would catch COVID, another said that her kindergarteners did not take the model as literally as she expected. These different experiences are not unexpected, as children at this stage of cognitive development are just beginning to think symbolically.

Training supported nurses in delivering, adapting, and extending educational tools

Nine out of ten cohort nurses reported that they felt prepared to use the toolkit after the training session, while one who felt only "somewhat prepared" would have liked more time to practice. One nurse shared that she went back to the video recording to rewatch parts of the training—an unexpected benefit of the virtual format. In addition, others mentioned that the simplicity of the activities and the facilitation guides made it easy to train others, such as teachers and nursing student assistants. However, one challenge encountered by cohort members was tailoring the content for different age levels. In future iterations of the program, trainings could more explicitly address how to simplify the

content for younger (grade K-1) students or encourage more complex thinking about the simple materials among older (grade 5-6) students.

As intended with the flexible nature of the toolkit, nurses were confident in adapting the materials for their purposes by adding community context or integrating other vaccine education resources. Examples include personalizing the "Why Vaccines Matter" demo by assigning students' names to the bubbles, extending the model in "How Vaccines Work" by putting the virus into a large plastic bag to represent the cell, incorporating a government public service announcement video about vaccines with a catchy jingle, and working with nursing students to communicate the information in a poster display for older children.

Toolkits helped nurses build community vaccine confidence at a critical time

Despite the logistical challenges of organizing programming near the end of the school year, many nurses in the cohort reflected that this pilot phase of the SVEP was well timed. While community tensions over lockdowns and the workload of daily contact tracing had eased, COVID case counts were rising in May and June, bringing the issue to people's attention once again. The toolkit offered an opportunity to renew the conversation in a way that was grounded in science. For instance, one nurse encountered resistance from a parent who questioned whether she was pushing the vaccine on students. In response, she was able to explain that, during the pandemic, she wanted to make sure that students knew about the science of COVID-19 and how to prevent it from spreading, without making the vaccine the entire focus of the lesson.

"I loved everything about this program. I ran a vaccine clinic after using the tools which seemed to help. We were able to vaccinate 9 students that were unvaccinated. We were also able to give boosters to approximately 30 students."

Nurses perceived that their toolkit programming had a positive influence on community vaccine confidence. In conjunction with the letter to families, one nurse observed that "when kids are engaged, they go home and report what they learned and talk about vaccines." Several nurses shared that, following in-school programs, they received phone calls from families asking for more information about vaccines. Going further, two nurses who held vaccine clinics at their schools during the implementation period felt that the communication channels opened by the toolkit programs directly influenced families' decisions to get their children vaccinated at the clinic. One nurse even got questions from unvaccinated staff members who heard her presentations for students, and subsequently decided to get vaccinated themselves.

<u>Future Directions:</u>

With COVID-19 vaccines now authorized for children aged 5 and under, following CDC's recommendation on June 18, 2022, the School Vaccine Education Program has an opportunity to embed programming in kindergarten readiness initiatives. As the nurses' experience with the youngest learners in this pilot project demonstrate, different tools will be needed to engage even younger preschool-aged children and their families in learning about concepts of viruses, vaccines, and immunity. For future

work, the project team envisions a play-based approach that will give nurses the tools to scaffold age-appropriate, STEM-forward role play and storytelling around vaccines.

The success of the SVEP in the Philadelphia area holds promise for an opportunity to expand the initiative to a national scale. However, there are anticipated challenges in reaching a broader network of school-based nurses. For instance, The Franklin Institute is a well-known and trusted science institution in the Philadelphia region (likely contributing to the high level of interest in the program from local applicants), but it does not carry the same name recognition in other parts of the country. The project team can instead champion the voices of nurses in the pilot cohort, using a peer-to-peer approach to communicate the value of the program. In addition, there are likely to be different factors influencing vaccine confidence in other areas that will need to be explored, including variation in school district policies and local public health guidance. Additional resources may be required to address new concerns or support management of confrontational situations. Still, the positive outcomes of the pilot phase in diverse Philadelphia neighborhoods highlight the skill, creativity, and relationships that nurses bring to their work as they adapted the toolkit to connect with their communities.

"I am so very grateful that you reached out to school nurses on the frontlines. Recognizing our position as one that is valuable in terms of what we experience and witness is a very powerful affirmation."

In the longer term, the model of building the capacity of school-based nurses to lead health education initiatives, using best practices of informal science education, could be applied to a variety of other topics. Previous work by The Franklin Institute and Temple University has shown that informal interactive programs are effective tools for building understanding and cultivating dialogue about the complex interrelationships between the human body, the physical environment, and social structures that shape health outcomes.[1] Future efforts could tackle these types of interdisciplinary, culturally relevant topics, such as nutrition, sexually transmitted infections, or environmental health, for students across the K-12 spectrum. The outcomes of the SVEP pilot demonstrate that, with appropriate tools and training, nurses enjoy, build expertise, and feel empowered by being leaders in innovative health education for the wellbeing of their communities.

[1] Kinsey, Dirk, Allison Hayes-Conroy, and Jayatri Das. 2021. "Biosocial 'Science Talk': Using Informal Interactive Programs to Help Children Explore the Human Body's Relationship with the World Around It." *Journal of STEM Outreach* 4 (1): 1–13.

APPENDIX A: EXAMPLES OF TOOLKIT MATERIALS

How Vaccines Work
Activity Guide

Learning objectives:

- Vaccines teach your body to recognize a virus and fight back.
- Vaccines can't give you the disease.

Materials:

Picture of coronavirus

Virus model:

- Plastic wiffle ball
- 8 blue foam darts
- Long blue/white shoelace

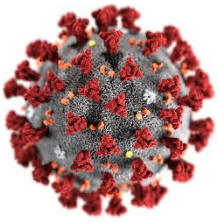
Vaccine model:

- Small plastic zipper bag
- Short blue shoelace
- 1 blue foam dart

What to do:

Part 1 – Building a Virus

1. Ask students what they know or have heard about viruses:
   - *Have you heard the word "virus" before?*
   - *What is a virus? What does it do?*
   - *Have you ever seen a virus? Why not?*
2. Accept student answers and summarize key points: **Viruses are germs that are too tiny to see. They can get inside a person through the nose or mouth, where they start to make lots of copies of themselves. This makes the person sick.**



3. Show students the picture of the coronavirus – the kind of virus that causes COVID-19. Explain that scientists used special, powerful microscopes to take a picture of the virus. The different colors were added to the picture to help us see the different parts of the virus.
   - *What do you notice about the virus?*
   - *What different parts can you see?*
4. Invite students to help you build a model of the virus. Show them the model materials (ball, foam darts, and shoelace) and invite them to compare with the coronavirus picture to think about which parts of the virus each material could represent. Briefly explain what each part of the model represents as you assemble the body and spikes. You could involve students by asking one person to hold the ball and others to push the foam darts into the holes.
   - *Ball: The virus's body is like a round shell*
   - *Foam darts: The outside of the body is covered with spikes*

5. Show students the long shoelace. Explain that the last piece of the virus is the instructions for building the virus. Different sections of the shoelace represent instructions for building different pieces of the virus.
   - *Which part of the instructions do you think are for building the spikes?*
   - *Where on our virus model do you think the instructions go?*

6. If needed, use the coronavirus picture to help students think about where the instructions go. (*If we can't see it on the outside, where else could it be?*) Then insert the shoelace into the ball through one of the open holes (or invite a student to help).

7. Using the model, ask students to think about how the virus works:
   - *When you breathe in the virus, which part do you think sticks to the inside of your nose or mouth first?*
   - *Which part does the virus need to make more copies of itself?*

Part 2 – Building a Vaccine

8. Explain that one way we can fight viruses that make people sick is with a vaccine.
   - *Have you seen or heard about vaccines before? What do you know about them?*
9. Explain that **a vaccine is a medicine that teaches your body what the coronavirus looks like**. If you catch the virus later, your body can recognize it and attack it right away, before it can make too many copies of itself. Imagine showing someone a picture of your friend so they can find them on the playground later.
10. Ask students to help you make a model vaccine for your virus.
    - *What part of the virus do you think is the easiest for your body to recognize?*
    - *Where do we have instructions for how to make that spike?*
11. Explain that scientists can make just the spike section of the instructions in the lab. Show students the short blue shoelace representing the genetic instructions for the spike.

12. Tell students that the instructions are fragile, so they need some packaging to protect them until they get to the right part of your body. Scientists package the instructions in tiny bubbles of fat, but we're going to use a plastic bag. Demonstrate by placing the shoelace into the bag and sealing it up (or invite a student to help you).
13. Now the vaccine is ready to go into your body. How does it get there? Ask students to represent the injection by giving themselves a gentle poke in the shoulder.
14. Explain that inside your body, the fat bubble packaging breaks apart. Demonstrate by removing the shoelace from the plastic bag.
    - *What is inside your body now?*
    - *What can your body build with these instructions?*
15. Hold up the single foam dart and the whole virus model. Ask the group to vote on which one the body can build. If needed, you could pull the long shoelace out of the virus model to compare with the short one.
16. Ask students to think about what this means for the virus in our bodies:
    - *Can the vaccine make us sick the way the virus does? Why not?*
    - *Now our bodies know what this spike looks like. What do you think will happen when a virus with this kind of spike gets inside our bodies?*
17. Discuss student answers and close by summarizing key points:
    - The spike protein is enough to prepare your body to recognize and attack the virus in the future, so you're less likely to get seriously sick.
    - The vaccine doesn't have enough information to build the whole virus, so you can't get COVID-19 from the vaccine.

What's going on:

Coronaviruses are a family of viruses—including both the common cold and SARS-CoV-2, the virus that causes COVID-19. These viruses are typically encoded by genetic instructions in a single strand of RNA. The RNA is packaged in a capsule with spiky proteins on the surface, which help the virus infect its host cell. Like fitting a key into a lock, the virus uses the spike protein to attach to a human protein called the ACE2 receptor that is common in the airways and other body tissues. Once attached, the virus is able infect the host cell and make more copies of itself.

When your body encounters a germ like the SARS-CoV-2 virus, a healthy immune system revs up to attack and destroy it. However, sometimes the immune system can't get the infection under control fast enough, or it overreacts and starts to attack the body itself. These reactions cause severe cases of COVID-19 that can lead to hospitalization or death.

A vaccine is a neutralized version of a germ that can trigger a "training" immune response, significantly reducing the likelihood of severe disease in the future. Both the Pfizer and Moderna vaccines rely on messenger RNA (mRNA) vaccine technology, delivering the RNA instructions for the spike protein packaged in a lipid nanoparticle. The body builds the spike protein from those instructions and generates an immune response before breaking down the vaccine components and flushing them out. Evidence shows that, compared to natural infection with SARS-CoV-2, full vaccination typically leads to a more consistent and initially stronger immune response.

Credits and rights:

Coronavirus image credit: CDC/Alissa Eckert, MSMI; Dan Higgins, MAMS

This activity was adapted by The Franklin Institute from an exhibit developed by the WonderLab Museum of Science, Health, and Technology.

This toolkit was made possible by support from the National Nurse-Led Care Consortium through a cooperative agreement with the Centers for Disease Control and Prevention.

Why Vaccines Matter
Activity Guide

Learning objectives:

- Getting vaccinated protects the people around you.
- High levels of vaccination in a community help protect unvaccinated people.

Version 1 – Best for grades K - 4 and smaller group sizes

Materials:

- "Low vaccination" bubble board (yellow)
- "High vaccination" bubble board (green)

What to do:

1. Introduce the idea of how germs spread by asking students about their own experiences with getting sick:
   - *Have you ever had a cold before?*
   - *Did you ever think about how you got it? Where did the germs come from that made you sick?*
   - *When you had a cold, did anyone around you get sick, too? Your sister or brother, or a friend at school?*
2. Explain that sicknesses like colds are caused by viruses – germs that are too tiny to see—and they can spread from one person to another. People who have the virus can infect the people around them and make them sick, too.
   - *What are some ways that people might spread germs to each other?*
3. Point out that some viruses, like colds, don't usually make people very sick, but other viruses, like the one that causes COVID-19, can be much more dangerous. To help protect us against the dangerous viruses, we have medicines called vaccines.
   - *Have you seen or heard of a vaccine before?*
   - *What have you heard about them?*
4. Invite students to help you find out how a virus spreads through a group of people using a model. Show them the yellow bubble board and ask them to imagine that it is a group of people. (To connect the model to students' experience, you could suggest a community they know, like "the kids at our school" or "the people in your neighborhood.)"
   - *Each bubble is a person*
   - *Marked bubbles are people with the vaccine – they are protected from the virus*
   - *Plain bubbles are people without the vaccine – they can catch the virus*

5. Invite a student to "infect" one person on the board by pushing down an unmarked bubble. Explain that the four "people" around the infected person—up, down, left, and right (but not diagonal)—will catch the virus from them, unless they are vaccinated. You could suggest a scenario where this might happen, like "this person sits with these four people at the lunch table." Ask students to push down those bubbles.
   - *Who is now infected with the virus?*
   - *Which new people can those people now infect?*

6. Ask students to infect any unvaccinated "people" that are in contact with the newly infected people (up/down/left/right) by pushing down those bubbles. You could ask students to suggest situations where the infections happen, like "these three sat together on the bus going home" or "these four went to the same afterschool program."
7. Repeat the infection step until there are no more unvaccinated people next to infected people. Remind students if needed that the vaccinated people (marked bubbles) can't get the virus, so those bubbles stay up.
8. Discuss what this model shows:
   - *What did you notice about how the virus spread through the group (our school)?*
   - *How many of the unvaccinated people got infected?*
   - *What do you think could make the virus spread more slowly?*
9. Show the group the green bubble board. Ask:
   - *What do you notice about this group of people? How is it different from our first one?*
   - *How do you think the virus will spread in this group?*

10. Repeat the infection activity (steps 5 – 7 above) with the green board. Then ask students to compare this result to the first one:
    - *What did you notice about how the virus spread in this group?*
    - *How many unvaccinated people got infected this time?*
11. Explain that there are some people who can't get the vaccine, like little kids and some people with other health problems that make the vaccine not work for them.
    - *If you couldn't get the vaccine, which group (school/neighborhood) would you rather be in—yellow or green? Why?*
    - *Do you know anybody in our community who can't get the vaccine?*
12. End by summarizing key ideas from the discussion:
    - Vaccinated people keep the virus from spreading to others around them. Having the vaccine protects not just you, but also the people around you.
    - When only a few people are vaccinated, the virus can spread around them.
    - When lots of people are vaccinated, the virus can't spread very far. This protects people who aren't vaccinated.

Optional extension:

What happens with a virus that spreads more easily? Try the activity again with each board, this time pushing down bubbles for unvaccinated people both adjacent and diagonal to the infected person.

Maintenance:
If the marks begin to wear off the bubbles, refresh using a permanent marker. On the yellow board, 30% of the bubbles are marked; on the green board, 80% are marked.

Version 2 – Best for grades 5+ and larger group sizes

Materials:

- Two large bowls or containers
- Index cards, 2 per student

What to do:

1. Before starting the activity, place cards in each bowl equal to the number of students in the class (for example, if the class has 25 students, each bowl should have 25 cards):
   - **Container 1 (low vaccination)**: Write "virus" on 3 cards, "vaccine" on 3 different cards, and leave the rest blank.
   - **Container 2 (high vaccination)**: Write "virus" on 3 cards, keep 3 cards blank, and write "vaccine" on all the remaining ones.
   - Fold all cards in half as you put them in the bowl so no one can read them.
2. Introduce the idea of how germs spread by asking students about their own experiences with getting sick:
   - *Have you ever had a cold before?*
   - *Did you ever think about how you got it? Where did the germs come from that made you sick?*
   - *When you had a cold, did anyone around you get sick, too? Your sister or brother, or a friend at school?*
3. Explain that sicknesses like colds are caused by viruses – germs that are too tiny to see—and they can spread from one person to another. People who have the virus can infect the people around them and make them sick, too.
   - *What are some ways that people might spread germs to each other?*
4. Point out that some viruses, like colds, don't usually make people very sick, but other viruses, like the one that causes COVID-19, can be much more dangerous. To help protect us against the dangerous viruses, we have medicines called vaccines.
   - *Have you seen or heard of a vaccine before?*
   - *What have you heard about them?*
5. Explain that you will be modeling how viruses like COVID-19 spread through a community, using the students in your class. Show Container 1 and explain that three people will be "infected" with the virus, three people will have vaccines, and the rest will have neither.
6. Invite each student to take a card from Container 1. They may open and read it but should not let anyone else know what it says.
7. Ask students to shake hands (or elbow bump, or air high five) with the students immediately next to them on all four sides. This represents times when the virus could spread between people.
8. Ask the students with the "virus" cards to raise their hands. Explain that anyone who shook hands with an "infected" person is now also infected and should raise their hands also—except people with the "vaccine" cards, who are protected.
9. Repeat the handshake process, with newly infected students now passing on the virus as well.
   - *How many students are infected now?*
   - *How many rounds do you think it would take until all the unvaccinated students are infected?*
   - *What could we do to slow down how the virus spreads?*
10. Show Container 2 and explain that in this case, almost all the students will be vaccinated.
    - *How do you think this case will be different from the first?*
    - *How many rounds do you predict it will take for all the unvaccinated students to be infected?*
11. Repeat steps 6 – 9 with Container 2 and count the number of infected people after each round.

12. Discuss:
    - *How was the spread of the virus different between the two groups?*
    - *Was there anything about how it spread that surprised you?*
13. Explain that there are some people who can't get the vaccine, like little kids and some people with other health problems that make the vaccine not work for them.
    - *If you couldn't get the vaccine, which group would you rather be in? Why?*
    - *Do you know anybody in our community who can't get the vaccine?*
14. End by summarizing key ideas from the discussion:
    - Vaccinated people keep the virus from spreading to others around them. Having the vaccine protects not just you, but also the people around you.
    - When only a few people are vaccinated, the virus can spread around them.
    - When lots of people are vaccinated, the virus can't spread very far. This protects people who aren't vaccinated.

What's going on:

Infectious diseases spread like a chain reaction, from one person to the people they interact with, to the people *they* interact with, and so on. Vaccination helps protect a person from getting sick, but it also slows this chain reaction because vaccinated people don't spread the disease as easily to others. High levels of vaccination help to build "community immunity" (often called "herd immunity" because the principle was first studied in groups of lab animals). Community immunity means that because the disease can't spread as easily between vaccinated people, it's less likely to spread to unvaccinated people as well.

Some people choose not to get vaccinated, but others *can't* get vaccinated—maybe because they are too young or because their immune system is weak for another reason. Often these are the people who are most likely to get seriously sick. The more people who get vaccinated, the more everyone is protected.

The level of vaccination needed for community immunity depends on the virus. The more easily a virus spreads, the more people who need to be vaccinated.

In this activity, vaccination completely stops the spread of the disease. COVID-19 vaccines do not completely stop the coronavirus, but they do help protect unvaccinated people in two ways. First, a vaccinated person, especially with a booster shot, is less likely to get infected if they are exposed to the virus. Second, if they do get infected, they are likely to be contagious for a shorter period of time.

Credits and rights:

Version 1 was adapted by The Franklin Institute from "Herd Immunity – Pop Its," developed by The Pensacola MESS Hall for Communities for Immunity.

Version 2 was adapted by The Franklin Institute from "New Vaccines Workshop, Activity 1: Creating Herd Immunity" developed by the Centre for the Cell.

This toolkit was made possible by support from the National Nurse-Led Care Consortium through a cooperative agreement with the Centers for Disease Control and Prevention.

Letter to Families

Dear Families,

Today, your child learned about the COVID-19 virus. We talked about the parts of the virus and how vaccines help our bodies to recognize and fight COVID-19. We also talked about how vaccines slow the spread of the virus in our school community.

Ask your child:

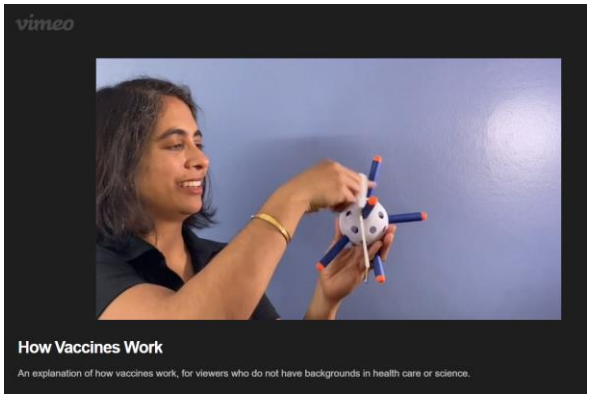
- **To draw or describe the COVID-19 virus**
  (hint: ask them to tell you about the baseball and dart activity!)
- **Describe how vaccines slow the spread of the virus**
  (hint: ask them to tell you about the bubble board activity!)

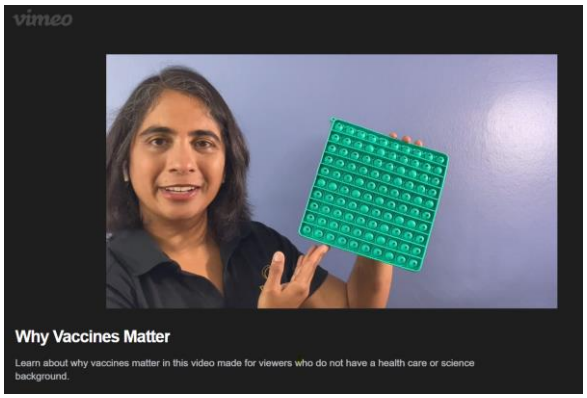
It's okay to have questions about COVID-19 vaccines. I am here to help you make the most informed decision about vaccinating your child.

Thinking about getting your child vaccinated? Please don't hesitate to reach out to me.
Let's work together to keep our school community safe!

Nurse Name
School
Email Address
Phone Number

Video Scripts





RUSSIAN	**ENGLISH**
Как действуют вакцины	**How Vaccines Work**
Вирус — это своего рода микроорганизм, из-за которого мы можем заболеть.	A virus is a kind of germ that can make us sick.
Вакцины — это лекарства, которые помогают защититься от вирусов, таких как вирус, вызывающий COVID-19.	Vaccines are medicines that help protect us against these viruses, like the one that causes COVID-19.
Но как действуют вакцины?	But how do vaccines work?
Вирусы очень маленькие. Поэтому, давайте создадим их модель в увеличенном виде, чтобы понять процесс заболевания.	Viruses are really tiny, so let's build a model – a pretend, bigger version of what the virus looks like – to understand how we get sick.
Тело вируса — это своего рода оболочка. Давайте представим, что этот пластмассовый мячик — оболочка вируса.	The body of a virus is like a shell. Let's pretend that this plastic ball is the shell of our virus.
Тип вируса, который вызывает COVID-19, также имеет шипы на его поверхности.	The type of virus that causes COVID-19 also has spikes sticking out of its shell.
При помощи этих шипов вирус прикрепляется к внутренней поверхности носа и рта.	The virus uses these spikes to stick inside your nose and mouth.
Давайте прикрепим эти мягкие дротики к мячику и представим, что это шипы.	Let's add these foam darts to the ball and pretend they're the spikes.
Последняя важная часть вируса — это инструкции. Инструкции сообщают, как вирус будет создавать свои копии, попав в организм.	The last important part of the virus is the instructions. The instructions tell it how to make more copies of itself once it is inside you.
Теперь он может распространиться по всему организму, в результате чего вы заболеваете.	Now it can spread throughout your body to make you sick.

У нашей модели вируса белая часть этого шнурка — это инструкция для создания оболочки, а синяя часть — для создания шипов.	In our pretend virus, the white part of this shoelace is the instructions for building the shell, and the blue part is for the spikes.
Инструкции хранятся внутри оболочки вируса, поэтому давайте заправим шнурки внутрь.	The virus carries the instructions inside the shell, so let's tuck the shoelace in.
Теперь, когда мы построили вирус, давайте разберемся как делается вакцина.	Now that we've built the virus, let's see how we make a vaccine.
Помните, какая часть вируса прикрепляется к телу первой? Правильно, шипы!	Remember which part of the virus sticks to your body first? That's right, the spikes!
Как только организм сможет распознавать эти шипы, он сможет давать отпор быстрее в случае повторной атаки вируса позднее.	Once your body can recognize the spike, it can fight back faster if the virus infects you later.
РНК-вакцины от Covid-19 учат ваш организм распознавать эти шипы.	Covid-19 mRNA vaccines teach your body to recognize the spikes.
В них заключены только инструкции в отношении шипа.	They include only the instructions for the spike.
Теперь ваш организм может использовать эти инструкции, построить такой шип и узнать, как он выглядит.	Now your body can use those instructions, build the spike, and learn what it looks like.
Вакцины не содержат в себе целый вирус или инструкции в отношении целого вируса, поэтому заразиться COVID-19 от вакцины невозможно.	The vaccines don't include the whole virus, or the instructions for the whole virus, so you can't get COVID-19 from the vaccines.
После вакцинации ваш организм начинает обращать внимание на шипы.	Once you get the vaccine, your body is now on the lookout for the spike.
Когда вы встретитесь с вирусом снова, вероятность того, что вы им заразитесь ниже, а того, что вы серьезно заболеете — значительно ниже.	When you see the virus again, you are less likely to get infected, and much less likely to get seriously sick.
Задавать вопросы о вакцинации — это нормально!	It's okay to have questions about vaccines!
Ваша медсестра, врач или другой мед. работник поможет вам на них ответить.	Your nurse, doctor, or another medical expert can help you find answers.
Давайте действовать совместно для создания безопасного общества!	Let's work together to keep our community safe!

ENGLISH	ARABIC
Why Vaccines Matter	**ما أهمية اللقاحات؟**
Viruses are germs that are too tiny to see – but they can still make you sick, like getting COVID-19.	الفيروسات هي جراثيم صغيرة جدًا لا تُرى بالعين المجردة، غير أنها يمكن أن تجعلك مريضًا مثل الفيروس المسبب لكوفيد-19.
When someone who has the virus coughs, sneezes, talks, or breathes, the virus spreads into the air.	عندما يسعل أو يعطس أو يتحدث أو يتنفس أي شخص مصاب، ينتشر الفيروس في الهواء.
People around them can breathe in, catch the virus, and get sick too.	والأشخاص المحيطون به يمكن أن يتنفسوا ويلتقطوا الفيروس ويصابوا بالمرض أيضًا.
Getting a vaccine can protect you from getting really sick if you catch a virus.	لذا، فالحصول على اللقاح يمكنه أن يقيك من الإصابة بالمرض الشديد إذا أُصبت بالفيروس.
But how can getting a vaccine help you protect other people?	ولكن كيف يساعد الحصول على اللقاح في حماية الأشخاص الآخرين؟
Let’s play with a bubble board toy to find out!	دعونا نلعب بلوحة الفقاعات لمعرفة ذلك!
Let’s pretend that this yellow board is a group of people in a neighborhood.	لنتخيل أن هذه اللوحة الصفراء هي مجموعة من الأشخاص في الحي.
Each bubble is a person.	وتمثل كل فقاعة شخص ما.
A marked bubble is someone who got the vaccine. They are protected from the virus.	الفقاعة التي بها علامة تمثل شخصًا قد حصل على اللقاح.فهم محميون من الفيروس.
A plain bubble is someone without the vaccine. They can catch the virus.	الفقاعة الخالية من علامات تمثل شخصًا لم يحصل على اللقاح.لذا فقد يصابون بالفيروس.
Let’s pretend that this person has the virus. We’ll push their bubble down.	لنتخيل أن هذا الشخص يحمل الفيروس.لذا، سوف نضغط على الفقاعة لأسفل.
Now pretend they sit down with four people at their lunch table – the bubbles that are up, down, left, and right.	والآن لنتخيل أنه يجلس مع أربعة أشخاص على مائدة الطعام – الفقاعات الموجودة بالأعلى والأسفل واليسار واليمين.
If any of them have the vaccine, they’re protected.	إذا تلقى أي شخص منهم اللقاح، فهو محمي من الفيروس.
If they don’t have the vaccine, they catch the virus. We’ll push their bubbles down too.	ومن لم يتلقَ اللقاح، فقد يصاب بالفيروس.سوف نضغط على الفقاعة لأسفل أيضًا.
Now these people can spread the virus to others. Let’s say this person sat next to these three people on the bus.	يمكن أن ينتشر الفيروس الآن عن طريق هؤلاء الأشخاص ويصاب آخرون.لنقل إن هذا الشخص جلس بجانب ثلاثة أشخاص في الحافلة.

What happens? Again, people who have the vaccine are protected, and people who don't, catch the virus.	ماذا يحدث؟مرة أخرى، الأشخاص الذين تلقوا اللقاح محميون والأشخاص الذين لم يتلقوه قد يصابون بالفيروس.
Every new person who catches the virus spreads it to others, and pretty soon, lots of people in this neighborhood are sick.	يمكن أن ينتشر الفيروس بين الآخرين عن طريق كل شخص جديد يصاب به، وخلال فترة قصيرة يصاب العديد من الأشخاص في الحي بالفيروس.
Now let's look at a different neighborhood.	لننظر الآن إلى حي مختلف.
In this neighborhood, many more people have the vaccine. See all the marked bubbles?	في هذا الحي، تلقى الكثير من الأشخاص اللقاح.هل ترون جميع الفقاعات التي بها علامات؟
Let's pretend again that one person has the virus, and push their bubble down.	لنتخيل مجددًا أن هناك شخصًا واحدًا مصابًا بالفيروس، ولنضغط على الفقاعة التي تمثله لأسفل.
But here, more people around them are protected, and not as many get sick.	ولكن في هذه الحالة، الأشخاص المحيطون به محميون أكثر، ولن يمرض الكثير منهم.
That means that the disease doesn't spread as fast, and even people who don't have the vaccine can stay healthy.	هذا يعني أن المرض لا ينتشر بسرعة وحتى الأشخاص الذين لم يتلقوا اللقاح قد يظلون أصحاء.
Of course, real life is a little more complicated than our bubble board.	بالطبع، الوضع على أرض الواقع أكثر تعقيدًا من لوحة الفقاعات لدينا.
When you get the COVID-19 vaccine, you can still catch the virus, but you're more likely to stay healthy.	عندما تتلقى لقاح فيروس كوفيد-19، لا يزال من المحتمل إصابتك بالفيروس ولكن من المرجح أن تظل بصحة جيدة.
You're less likely to pass the virus on to people who don't have the vaccine.	وتقل احتمالية أن تنقل الفيروس للأشخاص الذين لم يتلقوا اللقاح.
And that's especially important for protecting people who ***can't*** get the vaccine, like babies or people who have other serious illnesses.	وهذا مهم على وجه الخصوص لحماية الأشخاص الذين*لم يتمكنوا* من تلقي اللقاح مثل الأطفال الرضع أو الأشخاص الذين يعانون أمراضًا خطرة.
It's okay to have questions about vaccines!	لا بأس في أن يكون لديكم أي أسئلة بخصوص اللقاحات!
Your nurse, doctor, or another medical expert can help you find answers.	يمكن للممرض أو الطبيب أو خبير طبي آخر خاص بكم مساعدتكم للإجابة عن تلك الأسئلة.
Let's work together to keep our community safe!	لنتعاون معًا للحفاظ على مجتمعنا آمنًا!

One-Page Flyer

Hiểu rõ

SỰ THẬT VỀ VẮC-XIN

COVID-19

Vắc-xin dạy cơ thể của quý vị cách chống lại bệnh tật.

Vắc-xin COVID-19 cung cấp cho cơ thể quý vị những thông tin hướng dẫn để hiểu được hình thái của vi-rút corona. Sau đó, cơ thể của quý vị sẽ phân rã xin và đào thải ra ngoài. Nếu sau đó quý vị nhiễm vi-rút này, cơ thể của quý thể nhận diện được và tấn công chúng ngay lập tức. Quý vị sẽ ít có khả năng bệnh nặng hơn vì cơ thể đã chuẩn bị sẵn sàng.

Quý vị không thể mắc COVID

Vắc-xin không chứa bất kỳ vi-rút corona không thể truyền bệnh cho quý vị. Sau khi tiê thể cảm thấy mệt mỏi, đau nhức cánh tay ho hoặc hai ngày. Điều đó là bình thường và có n quý vị đang xây dự

Vắc-xin là lựa chọn đúng đắn để ngăn ngừa những căn bệnh ngh

Mặc dù có thể không giúp quý vị tránh bị nhiễm bệnh, nhưng vắc-xin có thể sống của quý vị. Những người khỏe mạnh ở mọi lứa tuổi đều có thể phát tr chứng nghiêm trọng và kéo dài, với nguy cơ cao hơn nếu bạn đang sống chu béo phì, tiểu đường hoặc huyết áp cao. Hầu hết những người gần đây đã nh COVID-19 đều không được chủng ngừa. Và nếu bạn đã có vi rút, vắc xin có t bạn nếu bạn bị bệnh trở lại.

Vắc xin COVID-19 đã được thử nghiệm cẩn thận

Hàng nghìn tình nguyện viên đ đã giúp các nhà nghiên cứu đ triệu người khác trên khắp t bạn chủng ngừa, các bác sĩ sẽ Không có bằng chứng nào cho Nhìn chung, rủi ro của CO

Quý vị có thể có câu hỏi về vắc-xin COVID-19.

Y Tá Tru

关于新冠

疫苗的若干事实

疫苗能教会您的身体对抗疾病。

新冠疫苗指导您的身体识别新冠病毒。之后您的身体会分解疫苗，并将其排出体外。如果您日后感染新冠病毒，您的身体会立即识别并对其展开攻击。您的病情不会太过严重，因为您的身体已经有所准备。

您不会因接种疫苗而感染新冠病毒。

疫苗不含任何活性冠状病毒，所以不会使您感染。接种疫苗后，您可能会感到疲倦，手臂酸痛，或发烧一两天。这很正常，这表示您的身体正在建立保护。

疫苗在预防严重病症方面真的很有效。

。任何年龄段的健康人群都可能
高血压，风险更高。最近因新冠
新冠病毒，则接种疫苗可在您再

安全性已经过严格测试。

社区的志愿者已参与试验，帮助
球已有数百万人安全接种了疫
意外的副作用。没有证据表明接
冠病毒的风险要远高于接种疫苗

提供帮助！

KNOW THE COVID-19

VAX FACTS

Vaccines teach your body to fight disease.

COVID-19 vaccines give your body instructions to learn what the coronavirus looks like. Then your body breaks down the vaccine and flushes it out. If you catch the virus later, your body can recognize it and attack it right away. You're less likely to get seriously sick because your body is prepared.

You can't get COVID-19 from the vaccines.

The vaccines don't contain any live coronavirus, so they can't give you the disease. After getting vaccinated, you might feel tired, have a sore arm, or run a fever for a day or two. That's normal—it means your body is building up protection.

Vaccines are really good at preventing serious illness.

While vaccines may not keep you from getting infected, they can save your life. Healthy people of any age can develop severe and long-lasting symptoms, with higher risk if you are living with obesity, diabetes, or high blood pressure. Most people who have recently been hospitalized from COVID-19 have not gotten vaccinated. And if you've already had the virus, vaccines can help protect you if you get sick again.

COVID-19 vaccines have been carefully tested for safety.

Thousands of volunteers of different ages, races, ethnicities, and communities helped researchers make sure the vaccines are safe for everyone. Millions more around the world have now safely received the vaccines. When you get vaccinated, doctors closely watch for rare, unintended effects. There's no evidence that vaccines affect your ability to have children. Overall, the risks of COVID-19 are much more serious than the risks of the vaccines.

It's okay to have questions about COVID-19 vaccines.

Your School Nurse is here to help!

Graphic Communication Assets