Skills Challenges for IgnITE Skills Challenge 2026

Theme: Agility IgnITEd – Human Science & Wellness Innovation

S/N	Challenge	Description
1	DermaRouge^{plus}*	In healthcare training, realistic wound moulage is often incorporated to help individuals appreciate different types of injuries. The primary objective of this challenge is to provide participants with a better understanding of what an injury might look and feel like through hands-on simulation.
2	PowerPlay: Fitness Data Quest*	While heart rate and fitness trackers are widely available, turning this data into actionable insights is still a challenge. Participants will explore agile solutions that transform raw fitness data into real-time insights, helping users, coaches, and trainers make smarter, data-driven decisions for sports and fitness.
3	The Pasta & Egg Challenge	This challenge gives participants a chance to apply the skills learned in MOE culinary elective modules in an agile setting. Participants will prepare a simple pasta dish using fresh pasta and finished with a poached egg, applying techniques such as egg preparation and basic pasta cooking. The goal is to reinforce workshop skills while encouraging creativity and practical application in culinary arts.

Theme: Sustainability IgnITEd – Greenovation & Sustainable Design

S/N	Challenge	Description
4	BreadCycle: Bread Reborn	Inspired by CNA's Zero Waste Kitchen initiative, this challenge encourages innovative thinking to combat food waste - specifically focusing on repurposing day-old bread that would otherwise be discarded. With sponsorship of day old bread from 'Gardenia', participants will transform waste bread into food products with extended shelf-life or non-food products.
5	Edible Ecofloat*	In this exciting hands-on Challenge, participants will apply their creativity, scientific knowledge, and problem-solving skills to design and build a floating garden using only recycled or repurposed materials to create a raft and plants such as herbs or vegetables.
6	HydroMotion: Green Grand Prix*	Students will design and build a small-scale hydrogen-powered car using recycled or repurposed materials that they source on their own. During the design phase, they may use AI tools to help generate creative ideas while ensuring that all

		components are made primarily from their self-supplied recycled materials. After the build, teams will race their cars to see which vehicle reaches the finish line first.
7	Re-ignITE our community lah!*	Participants will design and build a 3D model of their ideal community - a fun, friendly, and sustainable place where people can learn, play and connect. They will use recycled or upcycled materials to bring their ideas to life and show how their community encourages connection, growth and creativity.
8	Wild Wild Water	Participants will repurpose used PVC pipes into creative water features equipped with modern water quality sensors, enabling real-time monitoring via mobile devices. The challenge promotes sustainability, innovation, and practical use of emerging technologies.
9	Trash to Trend: You Nailed it!*	Participants will design a unique press-on nail art concept using reused and/or recycled materials to highlight sustainability in the beauty industry. They will present a live model dressed in recycled materials to visually express and promote their sustainable nail art concept. The final presentation should reflect both eco-conscious innovation and aesthetic appeal, promoting the idea of sustainable beauty through minimal product usage and maximum creativity.

Theme: Technology IgnITEd – Technology & Intelligent System

S/N	Challenge	Description
10	Biomechanics in Motion – Optimising Sports Performance*	Participants will explore biomechanics to improve athletic performance. Using scientific principles, they will analyse, model and optimise sports movements to boost efficiency, reduce injury risk and enhance overall performance.
11	iLight ITE	Participants will explore how light and motion can transform everyday objects into moving works of art. Using projection mapping, they will design and project visuals onto 3D objects, combining art and technology in creative ways. This activity encourages imagination, teamwork, and innovation through digital storytelling.
12	Smart EV Mobile Robot Challenge	Participants will program an autonomous Mobile Robot (mBot) to complete an obstacle course in the fastest time possible. Mobile Robots (mBot) used in this Challenge will be provided and loaned to all participants. Participants are required to bring their own laptops for software installation and programming purposes during the Preliminary Round and Finals.
13	Speed Coding with Micro:bit*	Participants will work in sender–receiver pairs to test their Python and Micro:bit skills. Teams will be given a simple math

		problem to solve using Python arithmetic (+, −, ×, ÷). Once they have the answer, they must transmit it to their team mate using the Micro:bit radio feature. The twist? No other form of communication is allowed no talking, messaging, or hand signals.
14	Supply Chain Warriors (Logistics Challenge)	Participants will experience emerging technologies deployed in the logistics industry and work as a team to complete challenging warehouse order fulfillment tasks. The teams will be evaluated based on performance, speed and accuracy during the competition.
15	The Gripper X Innovation Quest*	Participants will be put in the coach's seat to guide the robot to grip, move, and place shapes of increasing complexity, with tougher geometries earning higher points. During the finals, participants will then switch to tool-based tasks: dock a coloured pen, maintain a secure grip, and trace a path within an 8 mm band. Scoring focuses on accuracy, clean checkpoint transitions, smooth continuous movement, and speed.
16	Try Hack Us	The challenge is designed to boost cyber awareness among Singaporean youth through a Capture-The-Flag competition. It offers hands-on cybersecurity experience, helping participants understand online threats and safe practices. Participants will gain essential skills and knowledge to navigate the digital world safely and handle real-world cyber threats effectively.
17	X-Bots extra	Participants will take on the challenge of building a fully functional robot and mastering its control through both remote navigation and creative coding. They will also design and assemble essential components, including motors, sensors, and controllers, onto a dynamic robot platform. They will then experiment with coding to bring their robots to life, navigating and competing in a friendly tournament that celebrates innovation and teamwork.

**Indicates Skills Challenge introduced for the first time.*