

Audience

SmartBots

Students who are highly able / gifted from grades 5-8

Related Programs



Ad Astra Junior
Ad Astra Senior



CELO ArtyFacts Junior
CELO ArtyFacts Senior



GameCraft



Infinity Squared



Pegasus Project



Rockin' with Lil' Elvis



Socrates Café Book
Socrates Café Topical

So Far So Good

So Far So Good!

Selection of students


The selection of students should be based on the following criteria:


- students who regularly complete set work early and are looking for further challenge
- students with demonstrated advanced ability in specific curriculum areas (e.g. numeracy, literacy, science, technology)
- students with a 'passion' for an area of learning which is not readily covered by the regular curriculum
- students for whom under-achievement is considered to be a real or potential issue.

Although formal identification as a gifted student is not an essential criteria for selection, schools are encouraged to nominate identified students where appropriate and use available resources such as the Identification Package to support nominations.

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Smart Bots



Guidelines

About SmartBots

SmartBots is an online robotics extension program for students in grades 5-8. Working in small teams, students will use LEGO MINDSTORMS robotics kits and accompanying software to work through a series of skill building activities and challenges. Rural and remote schools are a focus for access to this program. Ownership of a kit is not a requirement for participation.

SmartBots is supported by SiMERR and LEGO Education.

Weekly challenges

Each week for 10-12 weeks, students work through an activity, usually based around a particular challenge. Early in the program, the activities are structured as guided tutorials, designed to develop skills and understandings relating to particular objectives. Later in the program, these activities are more open-ended challenges, designed to cater to a range of abilities. Participants have the opportunity to discuss ideas and showcase their work with others in the program.

Students participating in SmartBots typically need a minimum of two hours per week to design, build and program their robots, access course materials and communicate with the online teacher. Students may want to spend significantly more time than this working on their robots, so would benefit from increased access at school, for example at lunch time.

Online environment

The weekly challenges are made available to participating students and team mentors within a password-protected environment, and students are encouraged to submit weekly progress reports and share their responses to the challenges.

The online environment will also provide the communication tools to support philosophical discussions in relation to robotics as well as social networking for all participants.

Team mentor

An adult team mentor (teacher, teacher assistant, parent, or friend) will be required in each participating school to provide support, encouragement and trouble shooting for participating students. The team mentor will be expected to keep up to date with new material within the online environment, and assist the online teacher with feedback and some assessment of student participation, activity and needs. The team mentors will also develop understandings and skills in relation to robotics in order to build sustainability of the program.

A full-day workshop will be held prior to the commencement of the online program to provide an opportunity for these team mentors to become familiar with the kits, software, and course materials that the students use.

Online teacher

As with other online extension programs offered by CELO, the SmartBots program is managed by an online teacher who develops the content, maintains the site and works with the students online. This person provides introductory training sessions for team mentors, timely assistance (by email, discussion groups and telephone) to the students and team mentors as required, and makes site visits as appropriate and practical.

Selection of schools and teams

Depending on experience and access to equipment, the SmartBots program can accommodate between 12 and 24 schools, in each of the two semesters. Students from participating schools will work in teams of 2-3 students, with a maximum of two teams per school. Participants will be drawn from students who are highly able / gifted in grades 5 to 8.

The emphasis will be on attracting and supporting schools in rural and remote areas, with priority going to schools that do not have an established robotics program. At least twelve of these schools will receive two (2) LEGO MINDSTORMS NXT kits each (on a ratio of 1 kit per team).

In addition to supporting the schools that are new to robotics, as many as twelve schools that have their own equipment will also be able to participate.

Expectations for students

There is the expectation that students will communicate regularly with the online teacher.

Students are required to access SmartBots regularly, work within the set timelines and complete required activities / challenges to the expectations of the online teacher and support person. The specific requirements and expectations will be communicated by the online teacher to all participants and support persons.

SmartBots uses a delivery application that tracks student activity. If there is a reason why the student is not accessing the site (e.g. going on extended holiday) the delivery teacher should be contacted. Student logon is their VKEY username and password.

Acceptable use

Students must have signed the Acceptable Use Agreement in their school, outlining appropriate behaviour when using Information and Communications Technology. Repeated incidents of inappropriate behaviour will result in the student's removal from the SmartBots Program.

Software / Hardware requirements

The LEGO MINDSTORMS Software will be supplied under a site license that covers participating schools for the duration of the SmartBots online course. This software will need to be installed on accessible computers. Hardware requirements for the software:

- 256MB RAM minimum
 - Up to 300MB free disk space
 - XGA display (1024x768)
 - 1 available USB port
 - CD-ROM drive
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