

FIRST® LEGO® League Jr. Discovery programme: Second pilot 2019 evaluation

FIRST® LEGO® League Jr. Discovery was trialled by The Institution of Engineering and Technology in the UK and Ireland for a second pilot in 2019 with 23 primary schools in Scotland, Plymouth and Portsmouth. This followed a successful first pilot consisting of seven schools. Training was delivered pre-pilot to participating teachers, and equipment given to schools for free. Participating schools were identified by regional partners based on the criteria of being disadvantaged, hard to reach, within the 12 opportunity areas, within an area of low social mobility, or being remote.

At the end of the ten-week programme, participating teachers were asked to complete a feedback questionnaire designed by FIRST® and LEGO®. 14 questionnaires were returned from the 23 schools (61%) who participated, nine from Scottish schools, three from Portsmouth schools and two from Plymouth schools. This report presents key data and an overview of the evaluation of the second pilot of FIRST® LEGO® League Jr. Discovery based on the questionnaires collected.

Overall, the responses were very positive, with aspects of the programme such as the Team Meeting Guide, session outcomes and the Discovery model being identified as useful/very useful (Fig. 4). Improvements were noted in social-emotional skills such as teamwork, problem-solving and persistence (Fig. 7). All teachers felt satisfied with the programme and would recommend FIRST® LEGO® League Jr. Discovery to others (Fig. 10).

Programme logistics

Did you have enough time to complete the programme?

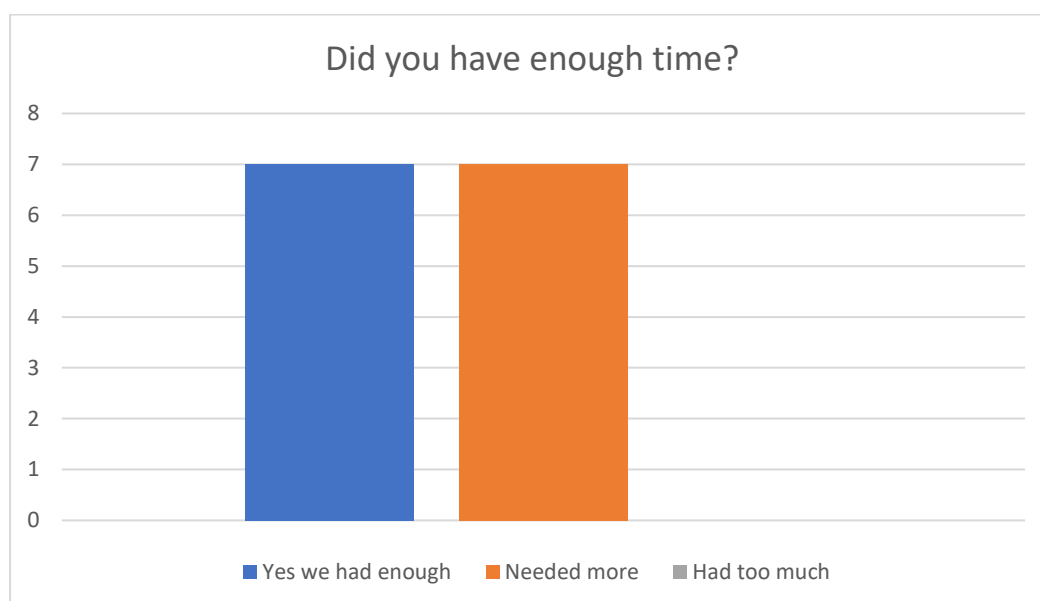


Figure 1

What was the boy/girl split in your class?

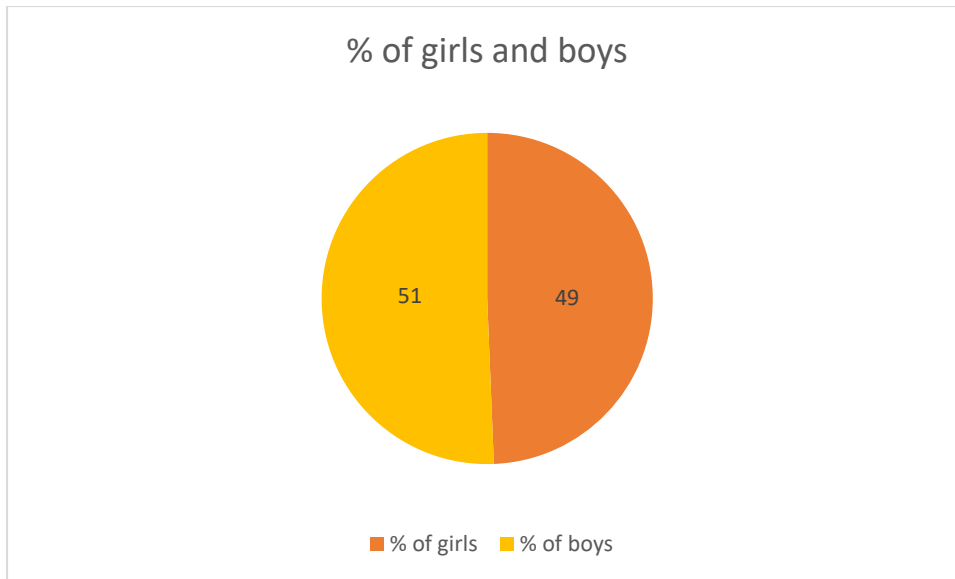


Figure 2

What were the ages of the children who participated in the programme?

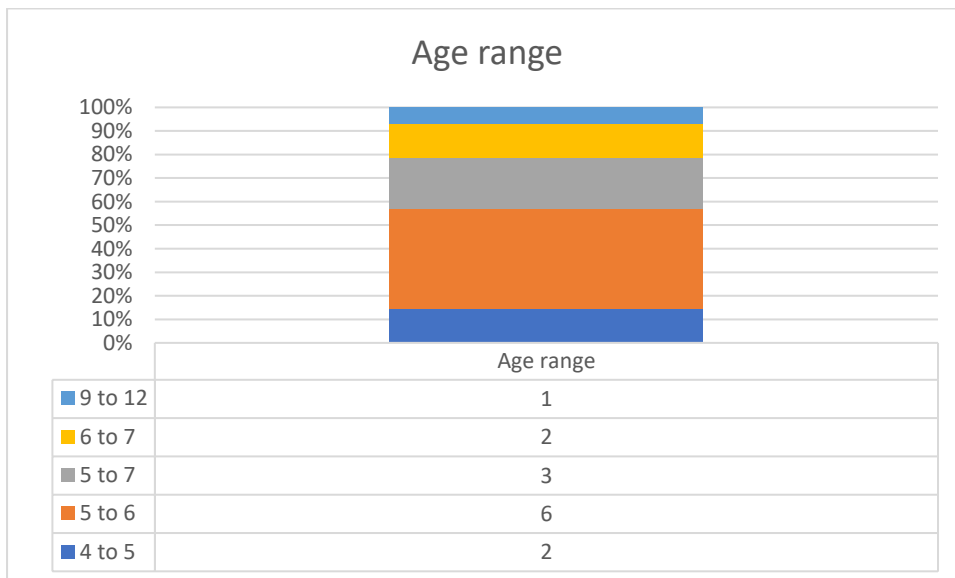


Figure 3

Programme implementation

How useful did you find the programme materials?

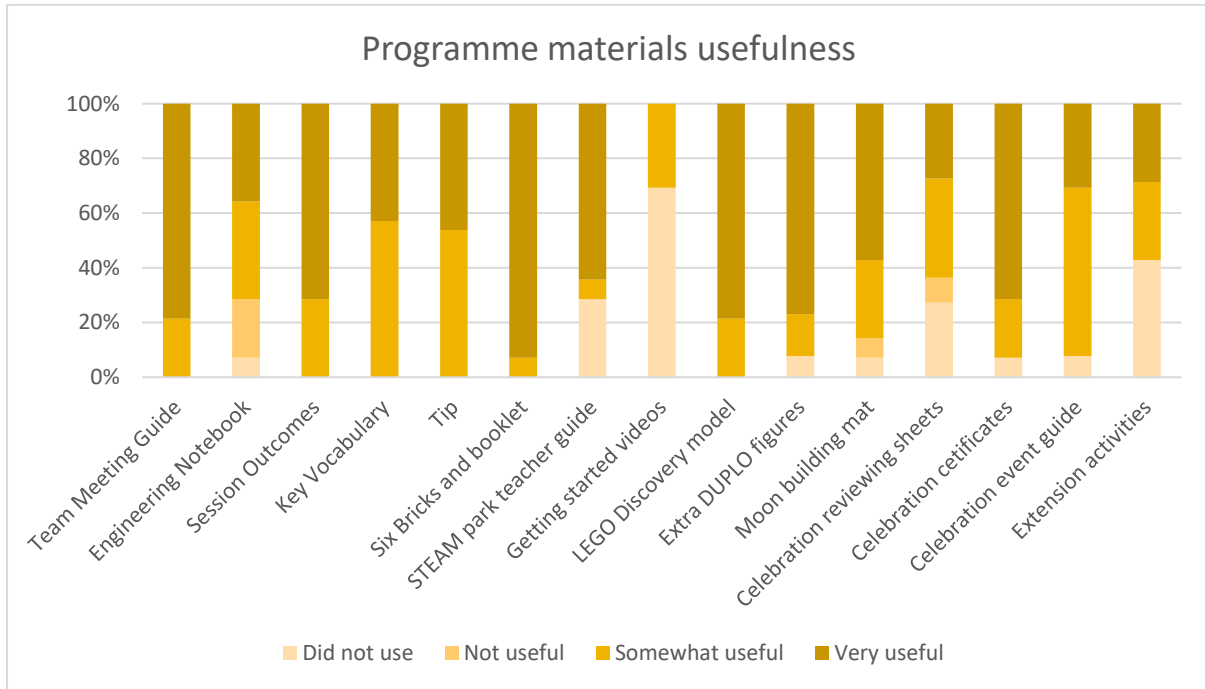


Figure 4

Were any of the elements of the programme challenging?

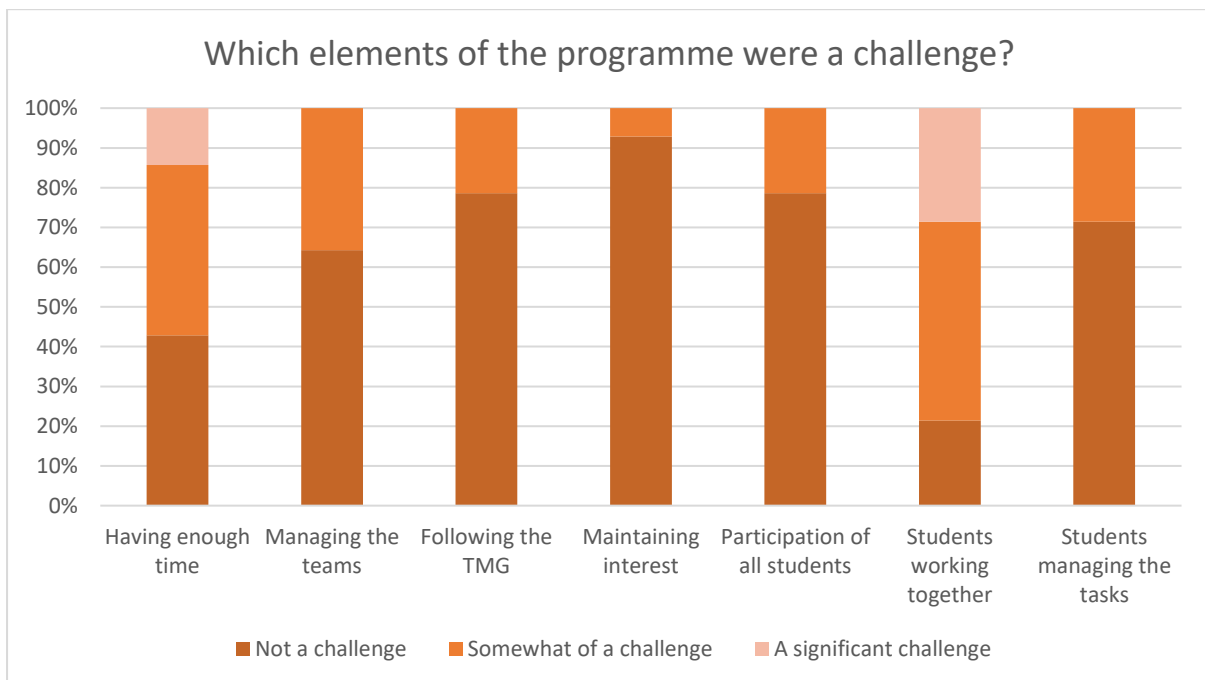


Figure 5

How much assistance did students need?

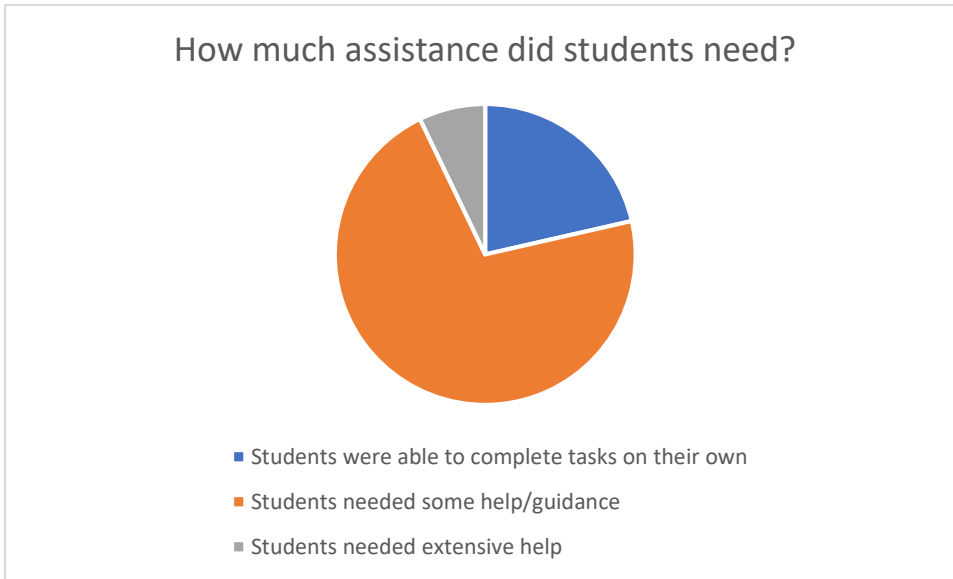


Figure 6

Programme impact

What was the impact of the programme on the social-emotional skills and attitudes of the children who participated?

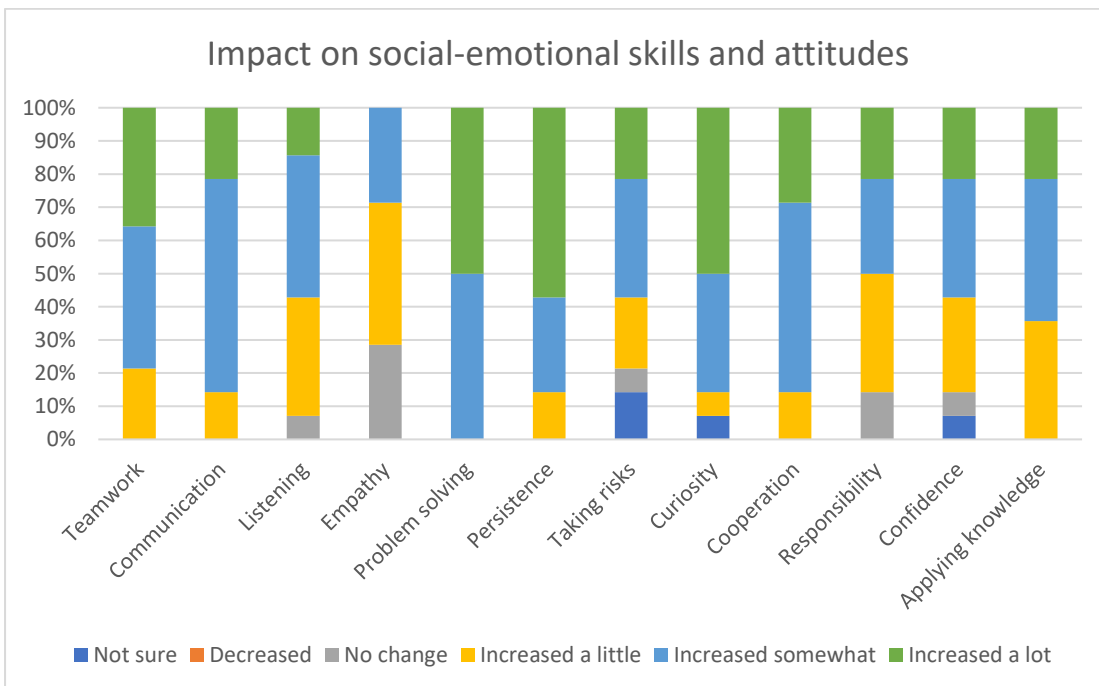


Figure 7

What was the impact of the programme on the STEM skills and attitudes of the children who participated?

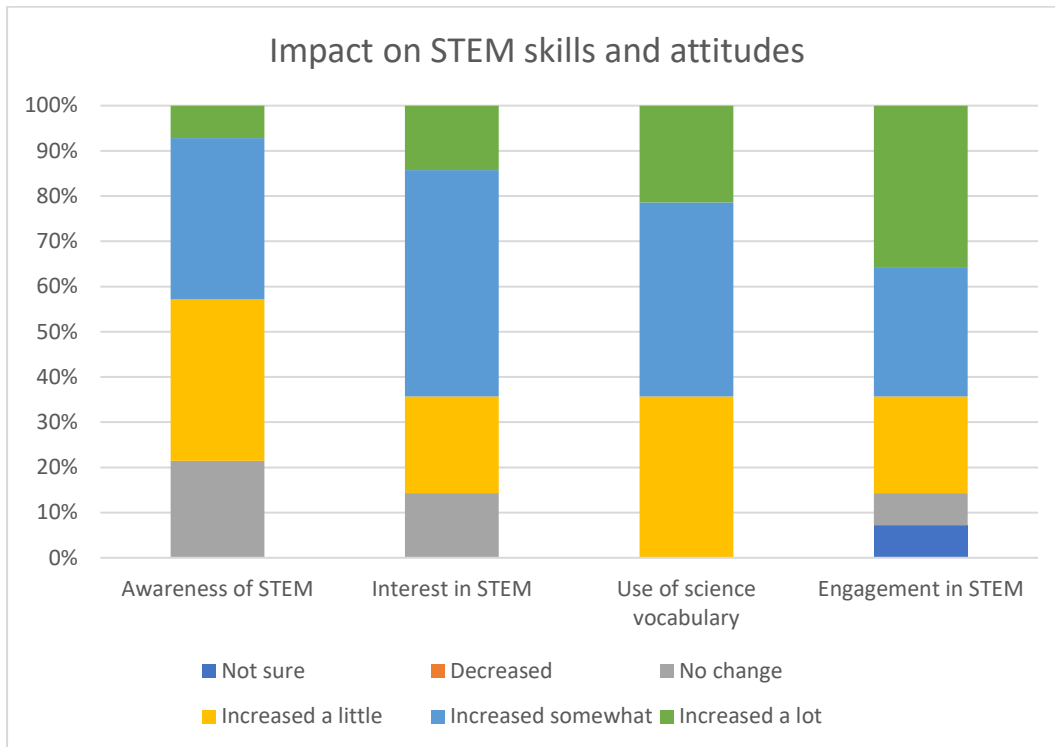


Figure 8

What was the impact of the programme on you as facilitator?

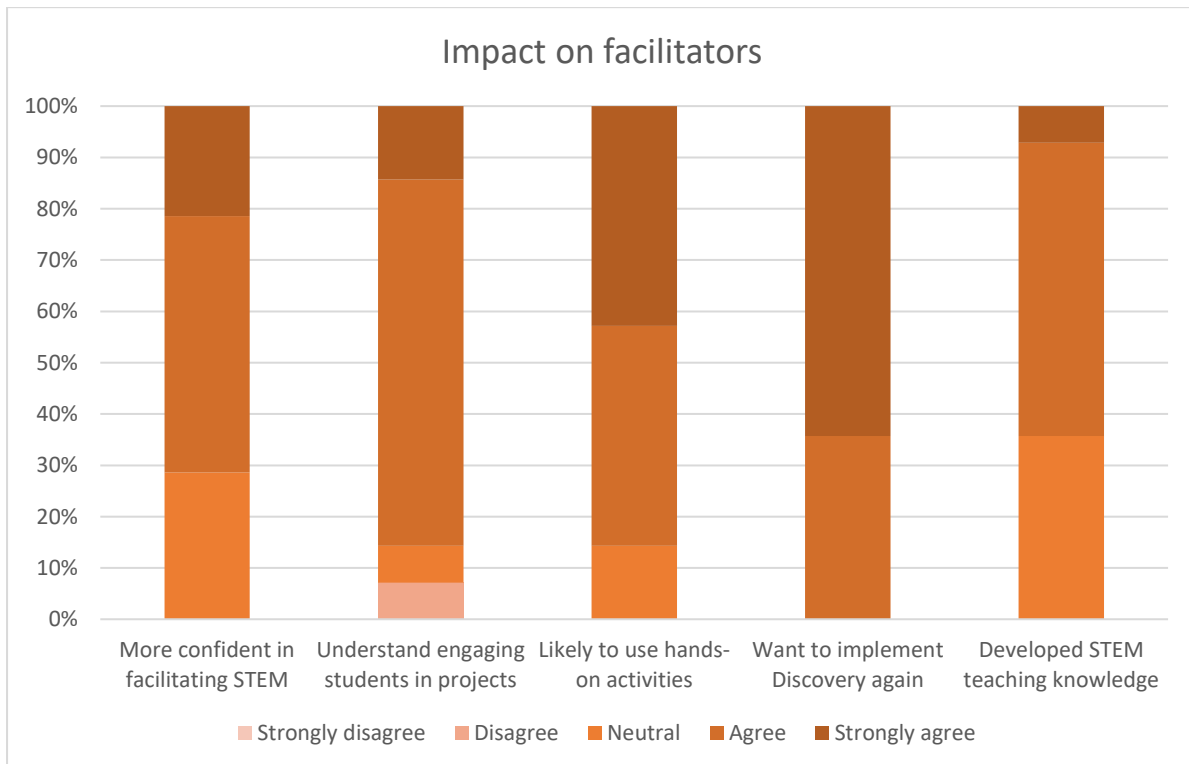


Figure 9

How would you rate the programme for quality, satisfaction and likelihood to recommend to others?

	Quality of Discovery programme 0-10 (0=low quality, 10=high quality)	Satisfaction 0-10 (0=very dissatisfied, 10=very satisfied)	Likely to recommend 0-10 (0=not at all likely, 10=very likely)
Average score	8.9	8.8	9.4

Figure 10

Conclusion

Overall, the impact of the programme was viewed positively by participating teachers. Use of scientific vocabulary and interest in STEM increased for the children as a result of the programme (Fig. 8), as did teacher confidence in teaching STEM and the likelihood of using hands-on activities in the future (Fig. 9).

Areas of difficulty were identified as not having enough time to run the programme (Fig. 1), which could be a result of the pilot being set up towards the end of the academic year. The majority of questionnaire responses indicated that children needed some support to access the programme (Fig. 6), but only a few responses said that children needed extensive help; this could be reflective of the age range and demographic of the children involved in the pilot programme. However, maintaining interest in the children was mostly not challenging (Fig. 5), suggesting that children found the programme stimulating.

The greatest impact was on social-emotional skills of children involved, with problem-solving, teamwork, communication, cooperation and applying knowledge all noted as increasing as a result of the programme (Fig. 7). Programme materials were generally considered useful, in particular the Six Bricks, Team Meeting Guide, Discovery model and session outcomes (Fig. 4). This is reflected in Fig. 9 which shows that all participating teachers would like to implement Discovery again.