



## The role of LEGO bricks in supporting community cohesion: a case study of Shared Education in Northern Ireland.

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**The role of LEGO bricks in supporting community cohesion: a case  
study of Shared Education in Northern Ireland.**

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## Executive summary

Using a matrix of factors which might enhance positive contact between groups, we analysed the role of LEGO bricks in enabling 11-year-old pupils from two schools in Northern Ireland to build their town of the future. Qualitative data showed that the teachers from these two schools, working in partnership with each other and with colleagues from a University, played a pivotal role not only in planning the activity but in modelling a respectful working relationship. Other contributory factors included equal numbers of pupils taking part, the construction of small cross-community teams and the use of facilities in a neutral location. The use of LEGO bricks was seen as critical in providing all of the pupils with an attainable 3D goal in which their own team contribution was visibly part of a wider cooperative task.

## Introduction

In many parts of the world, work is underway to bring schools together to build relationships between children who might not otherwise meet (Turner et al., 2013; Singh et al., 2021). This guide for teachers and educators is designed to take you through a step-by-step approach to planning and implementing how to use LEGO bricks to enable pupils to build their town of the future. What follows is a study involving teachers and their pupils in two primary schools in Northern Ireland who were in a long-standing Shared Education partnership and who worked with colleagues at Ulster University on this pilot project.

### 1. The key role of contact

Shared education in Northern Ireland is based on the premise that the right kind of contact between pupils who would not normally get to meet can reduce anxiety and prejudice and help to build trusting relationships. More recent research into the contact hypothesis has suggested that the underlying mechanism of the phenomenon is not increased knowledge about the out-group in itself but empathy with the out-group and a reduction in intergroup

threat and anxiety (Allport, 1954; Tropp et al., 2017; Pettigrew & Tropp, 2008; Pettigrew et al., 2011; Austin et al., 2021).

Successful contact is more likely to occur if:
It is cooperative rather than competitive. (F1)
It is long term rather than short term. (F2)
Is based on group-to-group contact rather than individual or whole class. Being part of a group with children from another school can help to build a wider sense of identity. (F3)
Takes account of the need for 'equality of status'; this is often used to mean that pupils should be of around the same age, with a similar range of ability but it can also be used to refer to teachers and others who enable joint work to be carried out. (F4)
Teaching staff are supported by senior staff so that the work is seen as part of the ethos of the school; this includes links with parents and the wider community to ensure they support the work. (F5)
The activities planned for pupils provide time and space for small group interaction, are linked to the curriculum and make use of both online and face to face contact where appropriate. If possible, there should be an 'end product' that reflects the completion of the activity. (F6)
The venue for the activity is fit for purpose; this might mean a neutral venue with enough space and furniture to allow for a wide range of activities. (F7)

Table 1. Factors for successful contact.

We know that there are a range of factors that can affect the quality of contact. The 7 factors above are derived both from research and practice. We use this as a framework for explaining the work we did with LEGO bricks. We refer to each of these points as F1-F7

(factor 1 etc) in the following sections to show how they informed the planning and implementation of the project.

## 2. Planning, core aims and organisation.

Staff at Ulster University approached two primary school teachers they had worked with on a previous course to promote blended learning and used Microsoft Teams to outline the idea of using LEGO bricks so that pupils could plan and then build their own model town. The application of LEGO was chosen partly because it contained elements of social harmony in that pupils were being asked to create a place together that they had ownership of but it also opened up the potential for more challenging questions about whether it was better to have shared or separate facilities for different groups.

Key decisions that emerged during the 3 online planning meetings were as follows:

2.1 The pupils involved would be in their final year at primary school, Primary 7. One of the schools had 2 classes with a total of 52 pupils while the other had one class of 26 pupils. To create 'equality of status' between the two schools, the teacher with the larger numbers agreed to run a competition to select pupils to take part and to plan a parallel activity with LEGO for those pupils who would not be involved in this pilot scheme. The Principals in both schools were drawn into discussions from the start and fully supported the work. (F4, F5)

2.2 Pupils were split into 7 working teams, each with around 6-8 pupils who would be randomly allocated to develop plans for different parts of the town. The working groups covered 'places of worship', 'schools', 'retail facilities', 'healthcare', 'leisure facilities', 'a business park' and 'housing'. Briefing sheets for each team were developed (see appendix 1) with questions designed to prompt discussion about whether facilities should be shared or separate and where they should be located. (F1, F3)

2.3 It was agreed that the project should span a period of 6 weeks from the end of April to the start of June starting with a face-to-face morning in one of the schools where

pupils would meet in their teams and plan their town construction. It would build on the year-long links the two classes had experienced. After the initial face to face meeting teams would continue to work together online and the project would culminate in a day on the University campus where each team would build their town with LEGO bricks. (F2, F6)

2.4 University staff successfully applied to the LEGO foundation for 3 sets of bricks to ensure there were enough for all aspects of the town's construction. The University was able to cover the subsidised cost of bus hire for one school (the other was close enough to the campus to be able to walk) and to pay for a maquette, a blank wooden base on which the LEGO buildings would be placed for the final face to face event. (F7)

### 3. The project in action

3.1 The two teachers took responsibility for coordinating the composition of the cross-community teams, parental permissions and the detailed coordination of the initial planning session for the 52 pupils which took place on the morning of 25th May 2023 in one of the schools. One of the University staff was present to work alongside the teachers to underline to pupils the partnership and prepare them for their day on the university campus. Pupils worked in their teams to plan their buildings using a template set up by one of the University staff. After this initial meeting pupils used a template of the town and worked online, asynchronously, to begin to develop their ideas about where each of the 7 teams were going to locate their buildings and facilities.

3.2 The LEGO bricks arrived in sufficient time for the University staff to unpack them and allocate to the seven construction teams for the final event on 9<sup>th</sup> June 2023.



Illustration 1. Before and after images of online shared planning template.

3.3 The venue for the event was a large hall on the University campus. One set of seats was arranged for the formal start but the work area was set up with the maquette on the floor in the centre and the seven work tables and chairs placed so that they were like spokes in a wheel. This layout was created to underline the sense that each team was connected to the wider purpose of constructing something together.

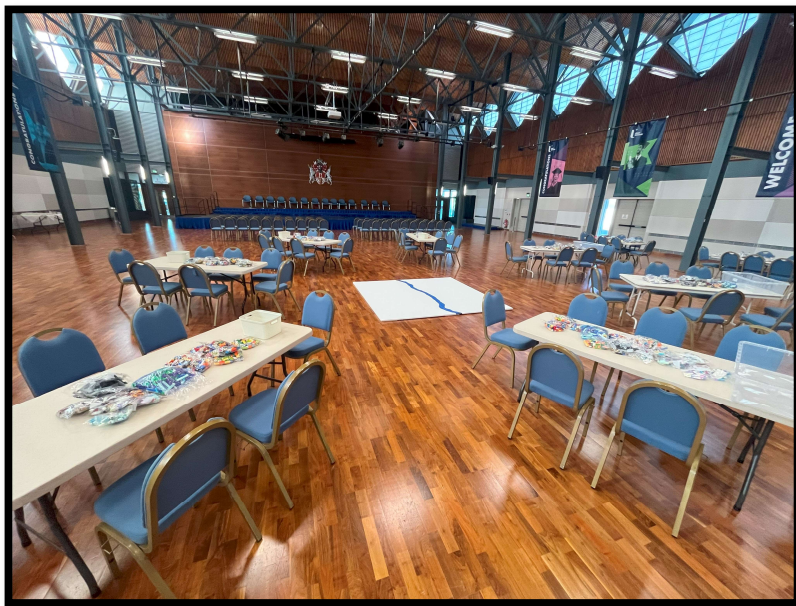


Illustration 2. Hall set up for the event.

3.4 As an ice breaker, each team was invited to choose a selection of songs they would like to listen to as they worked. This was used to create a shared playlist and was then played through speakers during the day. (F6)

3.5 The two teachers led the events of the day, working to an agreed schedule to give pupils enough time for construction and then discussion around the maquette on where different buildings should be located and why.



Illustration 3. Teachers leading the proceedings for the event.

## 4. Evaluation

### 4.1 Data collection

Data for the evaluation was gathered shortly after the final event on 9<sup>th</sup> June 2023 from the two teachers and from three other educators who were asked to play the role of observers and critical friends. We asked the teachers questions about the whole project experience and then the observers to comment on what they saw at the final event. Their comments are coded T1 and T2 for the teachers and Ob 1-3 for the observers.



#### 4.2 Opportunities for Blended Learning (F6)

The teachers commented on how the flow of the project started with a face-to-face event in one school and then moved online for 2 weeks prior to the final building day. During that initial meeting, each of the 7 teams had briefing notes to prompt discussion. Examples of these can be found in Appendix 1 and 2. For example, the team that had the job of building schools were given the following notes:

**When thinking about planning:** *'You need to think about how many schools you need and what type of schools will be needed in your town.'*

**When thinking about family preferences:** *'For example, while some parents (and children) may want to have a nursery/primary school which provides education for families from a Catholic background, others from the Protestant community may want a separate school for their children. However, there are also some families that like integrated schools, where children from many different backgrounds are educated together in the same building.'*

Table 2. Sample of briefing notes with thinking prompts.

After the first meeting, one of the teachers commented; *'I got my group together and we discussed reasons for having a hospital in this location or a school in this location or a shop here and we shared that plan with Darrell's group'* (T1). The other teacher added *'...they had their own take on it as well. So there were quite a lot of dynamics to cover and discuss at that point, but the (online) platform helped... we shared those opinions, online and they used that as their basis for building and the layout of their town on the 9th of June'* (T2). In other words, while the discussion started with both sets of children together, it continued both separately and online; as one of the teachers noted, *'A lot of the discussion came beforehand with the planning aspect of this'* (T2). Crucially, this preparation time fed directly into what happened on 9 June. One of the observers said:

*'I saw the girls building the hospital... one person was building the roof and another building the walls and they were constantly discussing the structure and how big it should be. And the good thing was that with the lovely designs drawn out before, they knew what they were making' (Ob1).*

In short, a blended approach to the project helped maintain the momentum of the work between the face-to-face events.



Illustration 4. Working as a team to develop the town

#### 4.3 Location (F7)

Observers commented on the choice of a particular room in the University where all the pupils came together on 9 June. One reflected that, *'physically it was good because it has lots of space for students to move and to sit down and to walk around the map in the middle... the conditions were great for inclusivity... it was a very neutral, open, positive space'* (Ob1). It also meant that when the building work was complete and the teams were ready to place their finished buildings on the maquette in the centre of the room, the entire group were able to cluster around their emerging town. One of the observers said, *'being able to pull it all together on*

*the large canvas, on the floor at the end worked perfectly in terms of the space and the layout of the room' (Ob1).*

#### 4.4 The Role of small groups (F3)

Both teachers remarked that the imbalance in the numbers of pupils between the two schools had meant that much of their previous work had been large group activities with relatively few opportunities for the kind of small group discussion that might nurture the development of relationships and friendships. The LEGO project was a complete change in that it required the pupils to work in equitable mixed teams of 6-8. One of the benefits of this, according to one of the teachers was that *a 'lot of people in my class would be introverted and it allowed them to sort of, to be heard and not ignored' (T2)*. Small groups also seemed to benefit the whole class *with one teacher commenting '70 or 80% said they preferred the smaller groups... I think that really helped them engage' (T1)*. One of the observers noted another advantage of having small groups:

*'They had a freedom to work on their own tables and not having an adult directly standing over them, which I think encouraged more dialogue between them but also gave them a bit more freedom to make decisions themselves based on the sort of construction of their buildings and the rationale as to why buildings were put in certain places' (Ob2).*

The size of the groups and the practical task the teams were given also created multiple opportunities for social conversations. Observer 2 saw it like this:

*'Children were talking about actually what they're doing and their own lives as well as the activity... it's important to see that sort of social interaction as well as the learning that was taking place, which is one of the key features of shared education that we're trying to promote and the development of friendships and relationships between the children and young people.'*

And as another observer noted, *'the bricks maybe were nearly just like the vehicle for those interactions to happen' (Ob1)*.

In the following section we look more closely at the role of the LEGO bricks.



Illustration 5. Discussions focusing on positioning of structures.

#### 4.5 The role of LEGO bricks

Creating a town of the future could have been done simply with paper and drawings but we wanted to know what added value the use of LEGO brought to the work.

Teachers and observers pointed to a range of benefits. One of the teachers captured the reaction of his class when they were told they were going to be doing a LEGO project; *'LEGO was the ultimate hook.. as soon as you mentioned LEGO they were buzzing about actually doing it'* (T2). After this initial enthusiasm, Observer 3 reflected on what took place on construction day:

*'I think it really brings their ideas and thoughts together in a 3D format and obviously the LEGO, because it's so tangible and they can build something...and then if it's not right, break it up and build something else... there's no such thing as doing it wrong. They were able to ..have their ideas in place and modify those as they went along. They were able to work interactively with each with each other, so they could focus on their own pace, but also help their friend or the group members as and when they need it and share their ideas across the group. So I*

*thought the LEGO was a brilliant vehicle for all of that to come together, which I don't think you would have got from paper.'*

One of the teachers pinpointed the difference between LEGO and other visual ways that the project could have been done:

*'You know, you put the arts and craft material out there. There's certainly disengagement with some children and young people because they feel they haven't got the skill set to be able to create something wonderful... But with LEGO, I think there's that flexibility to create something dynamic and put your own stamp on it.'* (T2).

He went on to note one other important dimension that arose because of the way that the LEGO Foundation had provided a mixed bag of bricks.

*'It was great that it was random bricks as well and not stuff with instructions... that would have killed the creativity'* (T2).

There is clearly a world of difference in the many ways that LEGO bricks can be used, ranging from the closely guided technical construction to what was at play in this project where the focus was far more on creativity. One example of this arose in the team building the 'places of worship'. The team decided that they wanted a mosque but had difficulties finding a LEGO piece that suited the roof, until one of the group found a satellite dish and turned it upside down to create a passable imitation of a dome. In another group, responsible for creating leisure facilities, one of the team scoured all of the trays of bricks until he found the right pieces to build a skateboard park.

For another observer, LEGO acted as the '*central focus, the connective bridge*' (Ob1) for the whole day and made it possible for all the teams to see in a highly visible way how each of their separate buildings, the shops, leisure facilities, schools, hospitals, places of worship and the business park became part of the whole town. The mixed teams were literally building their future together.

These comments are a reminder that simply having LEGO bricks is of little value unless there is a clearly defined rationale and expected outcome for their use.

#### 4.6 Partnerships and equal status

Both theory and practice refer to the importance of ‘equal status’ as being a necessary condition for successful inter-group contact (Allport, 1954). This is often translated into projects trying to connect pupils of about the same age and ability. One of the observers highlighted that this is also about equal numbers: *‘it always seems to work better when there is that sort of balance with the numbers, but it's not always just possible to do it’* (Ob3). As we noted in section 2.1 above, this meant ensuring that those that were not involved in the cross-community work had a comparable experience with the same resources.



Illustration 6. Teachers as role models with equal status

One feature of ‘equality of status’ that has not received much attention in other published reports is the ways that the teachers from the partner schools interact both with each other and with the mixed teams of pupils. We wanted to explore this dimension to get a sense of whether the partnership between the teachers was one of ‘equal status’. This is what the teachers had to say about the way they worked together:

*'[Teacher 2] and I would sing off the same hymn sheet when it comes to many things, probably in school and outside of school. So because it's such an easy working relationship, I had no doubt in my mind that the pair of us are able to agree without really having to make any compromises or have many debates.... it's an easy working relationship there' (T1).*

One of the observers summarised why this positive personal and professional relationship was so important:

*'The biggest role... was really respect working towards a common goal and working together as one unit. They definitely modelled that ethos of respect of working together as a part of a bigger whole and I think that modelling definitely influenced how the students interact with each other. I think that there were expectations set by that role modelling' (Ob1).*

This sense of respect and teamwork was also a feature of the relationship between the teachers and the University staff; one of the teachers put it like this;

*'It wasn't possible without all four of us working together closely. If I was left to my own devices to put that together in such a short period of time, I wouldn't have been able to manage it...but it's whenever you have people like yourself it keeps you focused, keeps you motivated, keeps you going. And I think it was a real team effort to get that thrown together so successfully in such a short period of time (T1).*

We take this to mean that 'equality of status' needs to include all the relationships between adults involved in this type of work. As another observer noted about the teachers, *'they really did take it in turns and you know, not just focusing on the children from their own school, but the other school as well. The teachers were very motivated because there was an atmosphere of collegiality' (Ob2).* This is a neat illustration of how the factors for successful contact are interconnected.

#### 4.7 Impact on the pupils

In addition to the perceptions of the observers on how the project was impacting on the children, the teachers also wanted to capture a sense of how their pupils had felt about the LEGO experience. What the following quotations from the children illustrate are the varied ways that it had engaged them, gave them a sense of purpose and helped build relationships as members of a team.

One said the '*LEGO town activity was awesome*' and enjoyed it because they could build '*lots of stuff*' and loved how they were '*linking it with friends*' ending the evaluation by saying all schools should have the chance to participate as they could '*make a friend for life!*' Another said they enjoyed talking with the people in their group and they easily made new friends. One said that they appreciated the teamwork within their group and loved seeing the finished product.



Illustration 7. Collaborative learning

More feedback stated that they loved working as a team, communicating and having fun. They stated that they loved using their '*imagination to build!*' A member of the class stated that they enjoyed the project because it helped their '*understanding of the world and our environment*' and stated that it '*helps us to learn to communicate positively*' and the class benefited from learning in a creative manner. One teacher reflected how as a very introverted female pupil worked on the project she became more comfortable around her peers from the other school and said '*we aren't shy anymore!*' She finished with exclaiming that '*it was so much fun meeting new people!*' Another noted that they loved the '*problem solving*' aspect of the project. They loved using LEGO to communicate with their team and solve problems.

Finally, when reflecting on the project, both teachers concluded that all of their pupils enjoyed the project and stated LEGO was amazing to work with. The most



notable comment reported from one of the students was *'I think I made more friends that time because we were interacting more and helping each other make LEGO houses. It was really fun because we got to use many different LEGO bricks!'*

We might summarize these comments to say that the pupils in the two schools had a very positive experience of working together. However, one key question we wanted to consider was 'Did the project enable these pupils to begin discussions about any of the more contentious issues involved in building a town which is shared by people whose cultural traditions, housing patterns and schools reflect different identities?' One of the teachers commented that children do not always agree in everyday life and this was evident even in the teams. However, the teacher explained that this project provided the opportunity for pupils to pursue ways to find a shared, pleasing and agreeable solution to their problem.

*..'they'll have that probably every day where they won't agree with their friends. And so that kind of teaches them how do we come to an agreement and that's a steppingstone for that. That was great to see from my end.'* (T2)

Both teachers commented on how conversations about the location of churches and schools had started a discussion:

*'We're chatting about religion and they realise that Catholic and Protestant are actually the same religion. So they were having a discussion where the Catholic Church should go and the Protestant church and they just agreed that they would be beside each other'. (T1)*

*'Mine were unanimous that you didn't need a separate school for separate people. It was all to be integrated'. (T2)*

To set this in some historical context, one of the teachers said that this type of work would have been much more challenging to complete in the past:

*'Because the schools are in opposite sides of the religious divide, for us to come over and be so warmly welcomed to a traditionally Unionist estate 20/25 years ago may have posed quite a few challenges and vice versa. And now even the whole community would welcome us in...the people wave out the windows or say hello. So, we're more integrated... definitely shared education has helped that'. (T2)*

One of the observers picked up on the fact that the two classes included children from several nationalities with different skin tones and religious backgrounds. *‘There were a number of children and young people who had obviously come from different ethnic and religious backgrounds, and I think that brought a nice dynamic to it’ (Ob2.)*

The emergence of multicultural classrooms is still at a relatively early stage in Northern Ireland but the project suggests that the presence of children from other faiths and ethnicity might make a positive difference to discourse that has been traditionally dominated by a Protestant-Catholic narrative. It’s worth noting that the children in this project were very clear that Coleraine should have a mosque demonstrating an awareness by the children to ensure that those from non-Protestant or Catholic backgrounds also felt welcome and at home in their town.

Another observer wondered if these initial conversations might have been extended ‘more in depth’ to explore housing patterns and settlement, in other words to move the focus gently from social harmony towards issues of social justice. Factors that made this difficult were the relatively young age of the pupils and the limited time available to run the project. Decisions about when and how to move conversation away from comfortable areas of agreement to ones that are more difficult will be guided by the location of the schools as well as the confidence and expertise of teachers. We might add that the quality of partnership between the teachers would be an essential starting point.

#### 4.8 Conclusion

The core aim of the project was to develop a ‘proof of concept’ around whether the use of LEGO bricks could enable young people to work purposefully together, whether in Northern Ireland or in other parts of the world where children lead separate but parallel lives. The evidence presented in this report suggests that LEGO bricks can be a very effective resource provided that the conditions for successful contact listed above are in place (See table 1).

## Next steps

One of the observers expressed the view that there would be Shared Education partnerships across Northern Ireland whose teachers would respond enthusiastically to a similar project with LEGO. Whatever resources are used, we hope that the contact framework and the processes we have described in this report help teachers in Northern Ireland and elsewhere to create the conditions for cross-community learning to reach all the pupils involved.



Figure 8. Working together.

## Acknowledgements

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## Appendix 1

### Briefing notes sample

#### **1. Education**

##### Nursery and Primary Schools

For example, while some parents (and children) may want to have a nursery/primary school which provides education for families from a Catholic background, others from the Protestant community may want a separate school for their children. However, there are also some families that like integrated schools, where children from many different backgrounds are educated together in the same building.

##### Post Primary Schools

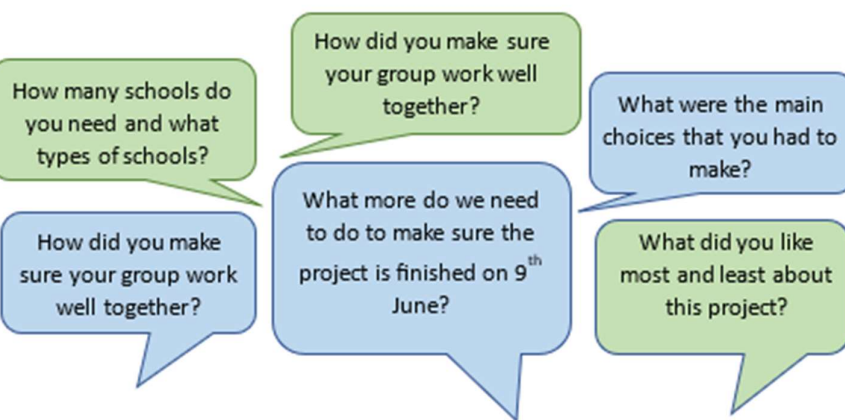
You also need to think about post-primary schools. In Coleraine some schools require you to pass an exam to get a place in the school but others don't.

##### Further and Higher Education

And don't forget we also have a Further Education College for those aged 16-18 and a University!!

##### **Thinking Time!**

Which education facilities will you include? You will not have enough time to build them all. Could you combine some?



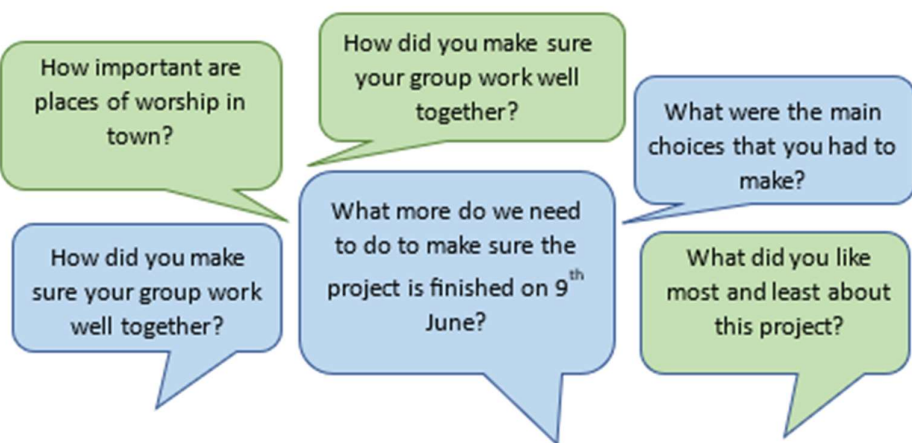
## 7. Places of worship

Some people in the town may like to attend a place of worship. In the past this has meant different types of churches, such as the various Protestant churches (Baptist, Presbyterian, Methodist, Vineyard, Church of Ireland etc) or Catholic chapels.

But the population of many towns is starting to change and we know that there are those who are Moslem, Hindu or Jewish. People from these faiths may need to have their own sacred places of worship.

### Think Time!

You may not have the time (or enough Lego bricks) to build a place of worship for each and every group but when you are planning to build places of worship, try to consider which ones you want taking account of the need to be fair and the amount of time for the team to do the building.





## Appendix 2

Photographs to illustrate prior planning completed by students.



Recreation and Leisure



Education



Business Park



Places of Worship



Retail



Housing

## Appendix 3

Samples of LEGO builds

