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Introduction

What is BuildToExpress?
LEGO Education BuildToExpress encourages participants to express their thoughts and ideas on any topic by building symbolic models with LEGO bricks. It is a great tool for enhancing team work and team spirit. Led by a Coach or facilitator, participants in the process – i.e. the team members – use their imagination and creativity to reflect and to communicate - enhancing dialogue. The method ensures a secure and non-judgmental process in which every team member gets the opportunity to be active, engaged and listened to.

With BuildToExpress participants use LEGO® bricks to build models that represent their thoughts and reflections. They use metaphors and assign meaning to their models as a means of communicating their ideas.

The Building Challenges are all connected to the FIRST LEGO League Jr. team building process.

When using the BuildToExpress kit and method with your team’s process, you start by introducing the rules of BuildToExpress (see Appendix 1) to the team members. To help introduce BuildToExpress, and to understand how to use the bricks to convey meaning and metaphors, you can use the metaphor exercises (see Appendix 2).

After explaining the rules and going through the metaphor exercises, you can present the team members with the first BuildToExpress Building Challenge. Read this Building Challenge out loud from the Building Challenge Card (see Appendix 4) and have them do one build at a time. Included are challenges for team building in the FIRST LEGO League Jr. process where relevant:

- Introduction to BuildToExpress and our team
- Teambuilding
- Our team name
- Explore the challenge - Idea generation
- What have we learned?
- Presenting our FIRST LEGO League Jr. results
- Evaluating our process

Each team member has his or her own set of bricks. Team members then build their own responses to the posed Building Challenge. The building time is stated on the cards in connection to each Building Challenge.

After having built their own individual models, the team members take turns to share something about their models. Each team member tells how his or her model is the answer to the Building Challenge. To illustrate the process of BuildToExpress to team members Appendix 3 can be helpful.

In the Building Challenge Cards section (Appendix 4) there are 1 to 3 Building Challenge Cards per meeting. You do not need to use all of these, but it is important to follow the progression of the Building Challenge Cards.
Why use BuildToExpress for FIRST LEGO League Jr.?

Team members make their otherwise intangible thoughts and ideas visible and tangible in 3-D LEGO® models, which make BuildToExpress ideal for investigating topics from a personal perspective. Team members use and develop their creative thinking and problem-solving skills by building individual models that illustrate their understanding of any topic.

The purpose of the Building Challenges is to have the team members reflect and discuss in a constructive way. Helped by their individual model, the team members understand more of what others are thinking and saying. Each team member’s thoughts and ideas are expressed. Furthermore, the BuildToExpress process enhances collaborative behavior among team members and motivate them to participate actively.

When FIRST LEGO League Jr. teams use BuildToExpress, the team members become more aware of their current resources as individuals and as a group, their vision for future FIRST LEGO League Jr. Challenge scenarios, and their role in making this vision become reality.

Core Values

BuildToExpress builds on the same values as the FIRST LEGO League Jr. Core Values (described in the Coach’s Guide). The following statements from the FIRST LEGO League Jr. Core Values are particularly relevant to BuildToExpress:

"FIRST encourages young people to learn the value of teamwork and to respect everyone’s ideas and contributions to the team.”

“Our Coaches and Mentors help us learn, but we find the answers ourselves.”

“We are helpful, kind, and show respect when we work, play, and share. We call this Gracious Professionalism®.”

“The FIRST spirit encourages doing high-quality, well-informed work in a manner that leaves everyone feeling valued.”

BuildToExpress is used in the FIRST LEGO League Jr. context in a simplified, limited format. To learn more about the BuildToExpress approach to learning please visit www.legoeducation.com
The Bricks, the Process, and the Facilitation

The LEGO® bricks are crucial to BuildToExpress because they are the means by which team members make their thoughts and ideas visible. The bricks fulfill the team members need to construct something in order to understand a concept. The bricks are not enough on their own, though. The method, i.e., the way in which the bricks are being used, is just as important. The method is essentially:

• A step-by-step process.
• A set of rules for the participants to follow.
• A specific code of conduct for the facilitator.

Step-by-step process
BuildToExpress always follows a certain process, with no exceptions, in order to allow everyone's voice to be heard. Appendix 3 can help illustrate the BuildToExpress process.

1. Building Challenge: The facilitator presents a Building Challenge to the participants.
2. Build & Think: The team members build a model representing their answer to the Building Challenge. The team members assign meaning to their own models while they build.
3. Share & Listen: The team members talk about their models one at a time and listen to each other's stories.
The Bricks, the Process, and the Facilitation

Rules

The rules for the team members are to ensure the integrity of the method. The rules create a playing field characterized by respect, helpfulness, and kindness toward each other. By teaching the team members the rules, you ensure that they get the most out of BuildToExpress. See Appendix 1 for a print friendly version of the rules.

1. When we use BuildToExpress, it is because we want to share our thoughts and ideas with each other.

2. Every time we use BuildToExpress, you will be given a Building Challenge by the Coach. With your own LEGO bricks, you build a model that will be your answer to the Building Challenge. Don’t share bricks, and don’t borrow from each other.

3. If you do not know what to build, just start putting bricks together while you keep thinking about the Building Challenge. This will inspire your ideas and thoughts. Think with your hands and fingers!

4. When building time is up, everybody describes what they have built – one by one. Everyone will share his or her thoughts by explaining the model that was built. We all listen to each other’s stories about the models.

5. Only the person who built the model can know what that particular model means. No one else may comment on the model or on how the person describes it.

6. The bricks should be used to express thoughts and ideas. They should not necessarily show things as they actually look in the real world around us. (The exercises in Appendix 2 help explain this)

7. Team members may ask open-ended questions about the model in order to gain a better understanding of the thoughts being shared. But remember, you are not allowed to comment on each other’s models. For example, you might ask the person who built the model how it illustrates his or her thoughts about the Challenge. Or ask about the significance or meaning of certain elements in the model.
Code of conduct for facilitators

FIRST LEGO League Jr. is supported by a specific set of Core Values. One of these Core Values states that the role of the Coach is to support the team members in finding their own answers. This is particularly important when facilitating BuildToExpress. As facilitator of BuildToExpress, the coach should exhibit appreciation for each individual’s contribution to the Challenge and to the team.

The way the facilitator handles his or her tasks is crucial to the integrity of the method and what the team members will gain from using this method.

The facilitator’s role and tasks during BuildToExpress are:

• The facilitator teaches the team members the rules of participation in BuildToExpress (see above and Appendix 1).

• The facilitator is the driver of BuildToExpress and reads the Building Challenges from the BuildToExpress Building Challenge Cards to the team members. He or she times the building phase and ensures that the rules of the method are being followed.

• The facilitator does not make suggestions as to what team members could build, even if a team member does not know what to build.

• The facilitator tells the team members to just start putting bricks together, even if they do not know what to build for their answer to the Building Challenge. Often while they build, team members think of something useful for answering the posed Building Challenge.

• The facilitator helps team members share more about their models and their meaning assigned to them by asking open-ended questions – and never by interpreting the meaning of the models.

• By thanking each team member for sharing, the facilitator expresses appreciation for every contribution that the team members make to the discussion through their stories about their models.
The BuildToExpress Building Challenges for FIRST LEGO League Jr.

There are 16 Building Challenges prepared for BuildToExpress in FIRST® LEGO® League Jr. (see Appendix 4). These Building Challenges can be used throughout the entire period of time that the team is working on the FIRST LEGO League Jr. Challenge. The aim of the BuildToExpress Building Challenges is to help the team members work better together as a team and communicate with each other about their thoughts and ideas in a constructive way.

The BuildToExpress Building Challenge Cards are written for the Coach (who takes the role of the facilitator) to read. Each Challenge card has an Introduction, a Building Challenge (Build), a sharing phase description (Share), and a section called Coach’s tip.

- The introduction can be read aloud to convey the purpose of the Building Challenge to the team members.
- The Building Challenge is then read to the team members.
- The team members build for the assigned building time (the suggested time can be found on the Building Challenge Card). The facilitator times the building phase.
- After the building time has run out, the sharing phase description is read aloud to the team members, and the team members share their thoughts and ideas through their models, one at a time.
- The Coach’s tip section offers advice for handling the role of the facilitator as well as specific tips for each Building Challenge.

You do not have to use all the Building Challenge Cards available, but they have been prepared as a sequence, with each Building Challenge being supported by the next. However, you must use the Introduction Building Challenge Cards designed for the first meeting before using the other Building Challenge Cards, as these introduce the team members to the method and show them how to use it correctly.
Coach’s preparation for BuildToExpress

The following is a list of things to remember when preparing for BuildToExpress:

• **Read this** FIRST LEGO League Jr. Coach’s Guide to BuildToExpress.

• The FIRST LEGO League Jr. BuildToExpress kit includes six individual element sets. When you receive your FIRST LEGO League Jr. BuildToExpress kit, label each BuildToExpress set – one for each team member on your team. This will remain his or her set throughout the time the team is working on the Challenge. Each team member should have exactly the same bricks, and they should not share with one another.

• Have a **table** ready that the team members can all sit around – a table that is big enough to allow them space to build with their bricks, but not so big that they will have trouble hearing each other when sharing their stories about their models.

• Consider **the time** you will need to conduct these specific BuildToExpress activities and all the other tasks you will need to get done during your team meeting.

• Determine if you will use the **metaphor exercises** from this guide when introducing BuildToExpress.

• Consider **trying some of the Building Challenges yourself** before doing them with your team – just to get a feel for the process.

• **Introduce** the team members to BuildToExpress by presenting the rules to them and by using some or all of the metaphor exercises described in appendix 2. You can also print the photos. Appendix 4 contains the Challenges specifically written for FIRST LEGO League Jr.

**Have fun!**
Appendix 1

Rules

1. When we use BuildToExpress, it is because we want to share our thoughts and ideas with each other.

2. Every time we use BuildToExpress, you will be given a Building Challenge by the Coach. With your own LEGO bricks, you build a model that will be your answer to the Building Challenge. Don’t share bricks, and don’t borrow from each other.

3. If you do not know what to build, just start putting bricks together while you keep thinking about the Building Challenge. This will inspire your ideas and thoughts. Think with your hands and fingers!

4. When building time is up, everybody describes what they have built – one by one. Everyone will share his or her thoughts by explaining the model that was built. We all listen to each other’s stories about the models.

5. Only the person who built the model can know what that particular model means. No one else may comment on the model or on how the person describes it.

6. The bricks should be used to express thoughts and ideas. They should not necessarily show things as they actually look in the real world around us. (The exercises in Appendix 2 help explain this)

7. Team members may ask open-ended questions about the model in order to gain a better understanding of the thoughts being shared. But remember, you are not allowed to comment on each other’s models. For example, you might ask the person who built the model how it illustrates his or her thoughts about the Challenge. Or ask about the significance or meaning of certain elements in the model.
Appendix 2

Metaphor Exercises

Exercise 1:
Show students the pictures below of the same LEGO® model with different interpretations written underneath. Ask the students to explain how the model can represent each of the different interpretations.

Brave

Shy
Exercise 2:
Show students pictures of different LEGO® models with the same interpretation. Ask students to explain how the models symbolize the same thing even though they look very different.
Exercise 3:
Show students different pictures of LEGO® models (without giving possible interpretations or “titles”). Ask them to explain what they think the different models might mean or indicate. Ask the students to explain what it is about each model that forms their interpretation of it.
Exercise 4:
Show students three or four different pictures of LEGO® models and ask them to express the effect (feeling or mood) the individual model has on them personally. Remind the students that there are no correct or incorrect interpretations of the models. What matters is the individual experience and expression.
Appendix 3

The BuildToExpress process

1. Building challenge

2. Build & think

3. Share & listen
Appendix 4

Building Challenge Cards

Before using any of the other Building Challenges, the Coach needs to introduce BuildToExpress to the team members using the instructions from the FIRST® LEGO® League Jr. Coach’s Guide to BuildToExpress and the “Introduction” Building Challenges (below).

Introduction

Introduction:
In order for your FIRST® LEGO® League Jr. team to work well together, you need to take time to share your thoughts and ideas with each other. BuildToExpress is a great teambuilding tool to help you talk about your ideas and to help you listen to your teammates’ ideas. The next building Challenge is to learn how to use the bricks in order to talk about your thoughts and ideas and listen to each other.

Build:
Put a LEGO minifigure together and choose 2-4 bricks that you think show something about your thoughts prior to going to the FIRST LEGO League Jr. meeting today.

Building time: 3 minutes.

Share:
Share with your team how your model now shows something about how you were feeling going to the meeting today.

COACH’S TIP:
Some team members may have difficulty adding something meaningful to the minifigure. The most important thing here is to have them share some thoughts about their minifigure EVEN if they didn’t add anything to it.
Introduction (continued)

Introduction: The next building Challenge is to learn how to use the bricks in order to talk about your thoughts and ideas and listen to each other. You will learn how to use LEGO bricks for sharing thoughts and ideas.

Challenge 2 of 3

Build: Think of what you like to do the best in your spare time. Add to your LEGO minifigure from before 4-6 pieces to show what you like to do in your spare time.

Building time: 3-5 minutes.

Share: Explain to your team how your model shows what you like to do in your spare time. (7-10 min.)

COACH’S TIP: A lot of team members need a slow introduction to grasp the idea of sharing their thoughts through the models. Don’t worry if they don’t all share a lot or grasp the idea yet. Continue to encourage the team!

Introduction: Getting to know a little bit more about each other – and getting good at using the bricks and models for sharing thoughts...

Challenge 3 of 3

Build: Think of a time where you were doing something fun with friends or family – how did you feel during this activity? Build a model that you can use to tell your teammates about this experience and about how it made you feel.

Building time: 5 minutes.

Share: Share your model with your team. Explain what the elements in your model mean.

COACH’S TIP: They can use the bricks and minifigure from their first build. Make sure the team members know that their models will not be an exact copy of the activity, but that they are to build something to express something about their experience of it.
Team building

Challenge 1 of 3

Introduction:
This is a warm-up building Challenge aimed at reminding you of how we use BuildToExpress.

Build:
How was your mood when you got up this morning?
Build a model that shows your mood when you got up this morning.

Building time: 3 minutes.

Share:
Share your model with a partner. Explain what the elements in your model mean.

COACH’S TIP:
Warm up, and refresh the BTE process and rules.

Team building (continued)

Challenge 2 of 3

Introduction:
Think about the future after we have completed the FIRST® LEGO® League Jr. Challenge together. Imagine the situation like this: You have done a marvelous job together as a team, and you are so happy with the things you achieved and learned working on the Challenge together.

Build:
Build a model that shows how you think you will feel when you show off your FIRST LEGO League Jr. model and poster together with your team.

Building time: 5 minutes.

Share:
Share your model with your team. Explain what the elements in your model mean.

COACH’S TIP:
The team members will probably still not share their thoughts on the same level – some of them will be expressing themselves in an abstract manner, and some of them will build concrete models and explain about them. Keep in mind that you, being the facilitator, are not supposed to judge or evaluate the team members’ models. Instead, ask questions for clarification or for further information and/or just thank the child for sharing the story about the model with the team.
Team building (continued)

Introduction:
In order to be successful in the end, we all have to work as good team members.

Build:
Build a minifigure and choose 2-4 elements to add to it that will tell something about how you could be a good team member.

Building time: 3 minutes.

Share:
Share your model with your team. Explain what the elements in your model mean.

COACH’S TIP:
Facilitate the team members’ stories about their minifigures – try and ask them questions about the significance of the elements they have added to their minifigure, what do the elements tell about their characteristics as team members?

Our team name

Introduction:
Your team needs to have a name! Maybe you have already come up with team name ideas? Maybe you have not. These two next building challenges are for you to just start exploring.

Build:
Think about your team. Think about the team members who make up the team and the FIRST LEGO League Jr. Challenge you are going to complete. Now, build a model showing what you think makes it great to be part of this team.

Building time: 5 minutes.

Share:
Share your model with your team. Explain what the elements in your model mean.

COACH’S TIP:
If the challenge seems too difficult for the team members to grasp, try to simplify it like this: What do you think is great about your team?
**Our team name (continued)**

**Introduction:**
Now it is time to think about what your team name could be.

**Build:**
Having listened to the stories about what makes it great to be part of your team, now build a model that describes the first idea of a team name that comes to your mind.

**Building time:** 3 minutes.

**Share:**
Share the description of your team name idea through your model.

**COACH’S TIP:**
Continue the process of picking out a name for the team by having the team members discuss the suggestions. They could also vote for the different suggestions by each placing three LEGO bricks – one on each of the three names they like the best.

**Idea generation**

**Introduction:**
In order for your team to make the best possible model to answer the FIRST® LEGO® League Jr. Challenge, the next building challenges give you the opportunity to share ideas for the model you are going to create.

**Build:**
Think about the FIRST LEGO League Jr. Challenge. In your mind, what is most interesting about the Challenge? Build a model that shows what about the Challenge you find the most interesting.

**Building time:** 3 minutes.

**Share:**
Share your model with your team. Explain what the elements in your model mean.

**COACH’S TIP:**
If necessary, in the sharing part you could ask questions that make sure that the team members share what they think is the most important and interesting about the Challenge.
Appendix 4

Building Challenge Cards

Idea generation (continued)

Introduction:
We are still working with developing our ideas for the FIRST LEGO League Jr. model we are going to build.

Build:
Keep thinking about the FIRST LEGO League Jr. challenge. Build a model that shows 2 or 3 things concerning the challenge that you think should definitely be shown in your team’s FIRST LEGO League Jr. model.

Building time: 3 minutes.

Share:
Share your model with your team. Explain what the elements in your model mean.

COACH’S TIP:
If necessary, in the sharing part you could ask questions that ensure that the team members share their ideas for the model answering the FIRST LEGO League Jr. challenge.

Introduction:
You need to prepare the rounding off of your FIRST® LEGO® League Jr. Project. This building Challenge will help you do that.

What have we learned?

Introduction:
You have learned a lot of things related to the FIRST LEGO League Jr. Challenge. What were the most interesting things you learned? Build a model that you can use to show your teammates what you think are the most useful things you have done and learned through this process.

Building time: 3 minutes.

Share:
Share your model with your team. Explain what the elements in your model mean.

COACH’S TIP:
Consider using the insights that the team members come up with here to discuss with the team members whether they feel they have captured all that information in the FIRST LEGO League Jr. model, poster and presentation.
**Presenting our FIRST® LEGO® League Jr. results**

**Challenge 1 of 2**

**Introduction:**
Think about your team’s FIRST® LEGO® League Jr. model. You put a lot of time, research and thought into creating it. The model contains a lot of meaning and information.

**Build:**
What does your team’s FIRST LEGO League Jr. model show? What have you built? Build a model that you can use to tell about your team’s model.

**Building time:** 3 minutes.

**Share:**
Share your model with your team. Explain what the elements in your model mean.

**COACH’S TIP:**
It will probably make sense to ask the team members questions that facilitate that the team members share as much detail as possible about what their FIRST LEGO League Jr. model shows – in order for them to prepare for their presentation.

**Presenting our FIRST® LEGO® League Jr. results (continued)**

**Challenge 2 of 2**

**Introduction:**
People will ask you about your Project and it is always easier to tell others about a Project you have done if you prepare that presentation a little on beforehand.

**Build:**
Imagine that you are presenting your Project to someone. Build a model that shows what you will do and what you will say in order to share what you have learned about the topic of the FIRST LEGO League Jr. Challenge during this Project.

**Building time:** 3 minutes.

**Share:**
Share your model with your team. Explain what the elements in your model mean.

**COACH’S TIP:**
After this building Challenge, it may be a good time to practice the team members’ presentation.
Introduction:
These building Challenges have the purpose of evaluating your FIRST LEGO® League Jr. experience.

Build: Build a model that shows what it was like to be on your FIRST LEGO League Jr. team.

Share: Share your model with your team. Explain what the elements in your model mean.

Building time: 3 minutes.

COACH’S TIP:
Let the team members express what they think – do not correct them even though you may not agree in their evaluation.

Introduction:
Now that you are an experienced FIRST LEGO® League Jr. team, what is the most useful advice you will want to pass on to next year’s inexperienced FIRST LEGO League Jr. teams?

Build: Build a model that tells about the advice that you would give to next year’s FIRST LEGO League Jr. teams.

Share: Share your model with your team. Explain what the elements in your model mean.

Building time: 3 minutes.

COACH’S TIP:
Please consider making a note of the team members’ evaluation and passing this information on to the FIRST LEGO League Jr. committee.
Optional warm up challenge

Introduction:
Optional warm up Challenge

Build:
Imagine that you and your team are a team of scientists working on a top secret project. Now, choose 10-15 of your bricks and build something you think you and your top secret scientist team would need in your top secret work.

Building time: 3 minutes.

Share:
Share the story of your model with your team.

COACH’S TIP:
Use this building challenge if you feel the team needs a fun and creative activity.