

Below is section 11.1.5 as it current exists in the ES6 draft. Note that the various semantic definitions just run on through the Semantics section although they are roughly group according to the production they apply to.

11.1.5 Object Initialiser

NOTE An object initialiser is an expression describing the initialisation of an Object, written in a form resembling a literal. It is a list of zero or more pairs of property names and associated values, enclosed in curly braces. The values need not be literals; they are evaluated each time the object initialiser is evaluated.

Syntax

ObjectLiteral :

```
{ }  
{ PropertyNameAndValueList }  
{ PropertyNameAndValueList , }
```

PropertyNameAndValueList :

```
PropertyAssignment  
PropertyNameAndValueList , PropertyAssignment
```

PropertyAssignment :

```
IdentifierName  
PropertyName : AssignmentExpression  
PropertyName ( FormalParameterListopt ) { FunctionBody }  
get PropertyName ( ) { FunctionBody }  
set PropertyName ( PropertySetParameterList ) { FunctionBody }
```

PropertyName :

```
IdentifierName  
StringLiteral  
NumericLiteral
```

PropertySetParameterList :

```
BindingIdentifier  
BindingPattern
```

Semantics

The production *ObjectLiteral* : { } is evaluated as follows:

1. Return a new object created as if by the expression **new Object()** where **Object** is the standard built-in constructor with that name.

The productions *ObjectLiteral* : { *PropertyNameAndValueList* } and *ObjectLiteral* : { *PropertyNameAndValueList* , } are evaluated as follows:

1. Return the result of evaluating *PropertyNameAndValueList*.

The *PropertyDefinitionList(name)* of the production

PropertyAssignment : *PropertyName* : *AssignmentExpression*
is determined as follows:

1. If PropName of *PropertyAssignment* is not *name* return the empty List.
2. Return a List containing *PropertyAssignment*.

The production *PropertyNameAndValueList* : *PropertyAssignment* is evaluated as follows:

1. Let *obj* be the result of creating a new object as if by the expression `new Object()` where `Object` is the standard built-in constructor with that name.
2. Let *propId* be the result of evaluating *PropertyAssignment*.
3. Call the `[[DefineOwnProperty]]` internal method of *obj* with arguments *propId.name*, *propId.descriptor*, and **false**.
4. Return *obj*.

The `PropertyDefinitionList(name)` of the production

PropertyNameAndValueList : *PropertyNameAndValueList* , *PropertyAssignment*
is determined as follows:

1. Let *previous* be `PropertyDefinitionList(name)` of *PropertyNameAndValueList*.
2. If `PropName` of *PropertyAssignment* is *name* then,
 - a. Append *PropertyAssignment* to the end of *previous*.
3. Return *previous*.

The static semantics of the production *PropertyNameAndValueList* : *PropertyNameAndValueList* , *PropertyAssignment* are:

- It is a Syntax Error if this production is contained in strict code, *PropertyAssignment* is the production *PropertyAssignment* : *PropertyName* : *AssignmentExpression*, and `PropertyDefinitionList(PropName of PropertyAssignment)` of *PropertyNameAndValueList* is not the empty List.
- It is a Syntax Error if *PropertyAssignment* is the production *PropertyAssignment* : `get` *PropertyName* () { *FunctionBody* } and `PropertyDefinitionList(PropName of PropertyAssignment)` of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : *PropertyName* : *AssignmentExpression*.
- It is a Syntax Error if *PropertyAssignment* is the production *PropertyAssignment* : `set` *PropertyName* (*PropertySetParameterList*) { *FunctionBody* } and `PropertyDefinitionList(PropName of PropertyAssignment)` of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : *PropertyName* : *AssignmentExpression*.
- It is a Syntax Error if *PropertyAssignment* is the production *PropertyAssignment* : `get` *PropertyName* () { *FunctionBody* } and `PropertyDefinitionList(PropName of PropertyAssignment)` of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : `get` *PropertyName* () { *FunctionBody* }.
- It is a Syntax Error if *PropertyAssignment* is the production *PropertyAssignment* : `set` *PropertyName* (*PropertySetParameterList*) { *FunctionBody* } and `PropertyDefinitionList(PropName of PropertyAssignment)` of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : `set` *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }.

The production

PropertyNameAndValueList : *PropertyNameAndValueList* , *PropertyAssignment*
is evaluated as follows:

1. Let *obj* be the result of evaluating *PropertyNameAndValueList*.
2. Let *propId* be the result of evaluating *PropertyAssignment*.
3. Call the `[[DefineOwnProperty]]` internal method of *obj* with arguments *propId.name*, *propId.descriptor*, and **false**.
4. Return *obj*.

The `PropName` of the production *PropertyAssignment* : *IdentifierName* is determined as follows:

1. Return `PropName(IdentifierName)`.

The production *PropertyAssignment* : *IdentifierName* is evaluated as follows:

1. Let *propName* be `PropName(IdentifierName)`.
2. Let *exprValue* be the result of performing Identifier Resolution as specified in 10.3.1 using *IdentifierName*.
3. Let *propValue* be `GetValue(exprValue)`.

4. Let *desc* be the Property Descriptor{[[Value]]: *propValue*, [[Writable]]: **true**, [[Enumerable]]: **true**, [[Configurable]]: **true**}
5. Return Property Identifier (*propName*, *desc*).

The PropName of the production *PropertyAssignment* : *PropertyName* : *AssignmentExpression* is determined as follows:

1. Return PropName(*PropertyName*).

The production *PropertyAssignment* : *PropertyName* : *AssignmentExpression* is evaluated as follows:

1. Let *propName* be PropName(*PropertyName*).
2. Let *exprValue* be the result of evaluating *AssignmentExpression*.
3. Let *propValue* be GetValue(*exprValue*).
4. Let *desc* be the Property Descriptor{[[Value]]: *propValue*, [[Writable]]: **true**, [[Enumerable]]: **true**, [[Configurable]]: **true**}
5. Return Property Identifier (*propName*, *desc*).

The PropName of the production *PropertyAssignment* : **get** *PropertyName* () { *FunctionBody* } is determined as follows:

1. Return PropName(*PropertyName*).

The production *PropertyAssignment* : **get** *PropertyName* () { *FunctionBody* } is evaluated as follows:

1. Let *propName* be PropName(*PropertyName*).
2. Let *closure* be the result of creating a new Function object as specified in 13.2 with an empty parameter list and body specified by *FunctionBody*. Pass in the LexicalEnvironment of the running execution context as the *Scope*. Pass in **true** as the *Strict* flag if the *PropertyAssignment* is contained in strict code or if its *FunctionBody* is strict code.
3. Let *desc* be the Property Descriptor{[[Get]]: *closure*, [[Enumerable]]: **true**, [[Configurable]]: **true**}
4. Return Property Identifier (*propName*, *desc*).

The PropName of the production *PropertyAssignment* : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* } is determined as follows:

1. Return PropName(*PropertyName*).

The static semantics of the production *PropertyAssignment* : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* } are:

- It is a Syntax Error if the source code matching this production is extended code and the PropName of *PropertyName* also occurs in the VarDeclaredNames of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and the PropName of *PropertyName* also occurs in the LexicallyDeclaredNames of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and any element of the LexicallyDeclaredNames of *PropertySetParameterList* also occurs in the VarDeclaredNames of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and any element of the BoundNames of *PropertySetParameterList* also occurs in the LexicallyDeclaredNames of *FunctionBody*.

The production *PropertyAssignment* : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* } is evaluated as follows:

1. Let *propName* be `PropName(PropertyName)`.
2. Let *closure* be the result of creating a new Function object as specified in 13.2 with parameters specified by *PropertySetParameterList* and body specified by *FunctionBody*. Pass in the LexicalEnvironment of the running execution context as the *Scope*. Pass in **true** as the *Strict* flag if the *PropertyAssignment* is contained in strict code or if its *FunctionBody* is strict code.
3. Let *desc* be the Property Descriptor{[[Set]]: *closure*, [[Enumerable]]: **true**, [[Configurable]]: **true**}
4. Return Property Identifier (*propName*, *desc*).

The `PropName` of the production *PropertyName* : *IdentifierName* is evaluated as follows:

1. Return `PropName(IdentifierName)`.

The `PropName` of the production *PropertyName* : *StringLiteral* is evaluated as follows:

1. Return the SV of the *StringLiteral*.

The `PropName` of the production *PropertyName* : *NumericLiteral* is evaluated as follows:

1. Let *nbr* be the result of forming the value of the *NumericLiteral*.
2. Return `ToString(nbr)`.

The `PropName` of the token *IdentifierName* is determined as follows:

1. Return the String value containing the same sequence of characters as *IdentifierName*.

The `ExpectedArgumentCount` of the production *PropertySetParameterList* : *BindingIdentifier* is determined as follows:

1. Return 1.

`HasInitialiser` of the production *PropertySetParameterList* : *BindingIdentifier* is determined as follows:

1. Return **false**.

The `BoundNames` of the production *PropertySetParameterList* : *BindingIdentifier* is determined as follows:

1. Return `BoundNames` of *BindingIdentifier*.

The static semantics of the production *PropertySetParameterList* : *BindingPattern* are:

- It is a Syntax Error if the source code parsed with this production is not extended code.
- It is a Syntax Error if `BoundNames` of *BindingPattern* contains any duplicate elements.

The `ExpectedArgumentCount` of the production *PropertySetParameterList* : *BindingPattern* is determined as follows:

1. Return 1.

`HasInitialiser` of the production *PropertySetParameterList* : *BindingPattern* is determined as follows:

1. Return **false**.

The `BoundNames` of the production *PropertySetParameterList* : *BindingPattern* is determined as follows:

1. Return `BoundNames` of *BindingPattern*.

#2 The following is an experimental alternative presentation of the above section

In this version the semantic definitions for all productions defined in this section are grouped together by semantic term. Static Semantics (if any) is always first and evaluation semantics is always last.

11.1.5 Object Initialiser

NOTE An object initialiser is an expression describing the initialisation of an Object, written in a form resembling a literal. It is a list of zero or more pairs of property names and associated values, enclosed in curly braces. The values need not be literals; they are evaluated each time the object initialiser is evaluated.

Syntax

ObjectLiteral :

```
{ }  
{ PropertyNameAndValueList }  
{ PropertyNameAndValueList , }
```

PropertyNameAndValueList :

```
PropertyAssignment  
PropertyNameAndValueList , PropertyAssignment
```

PropertyAssignment :

```
IdentifierName  
PropertyName : AssignmentExpression  
PropertyName ( FormalParameterListopt ) { FunctionBody }  
get PropertyName ( ) { FunctionBody }  
set PropertyName ( PropertySetParameterList ) { FunctionBody }
```

PropertyName :

```
IdentifierName  
StringLiteral  
NumericLiteral
```

PropertySetParameterList :

```
BindingIdentifier  
BindingPattern
```

Static Semantics

PropertyNameAndValueList : *PropertyNameAndValueList* , *PropertyAssignment*

- It is a Syntax Error if this production is contained in strict code, *PropertyAssignment* is the production *PropertyAssignment* : *PropertyName* : *AssignmentExpression*, and *PropertyDefinitionList*(*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* is not the empty List.
- It is a Syntax Error if *PropertyAssignment* is the production *PropertyAssignment* : **get** *PropertyName* () { *FunctionBody* } and *PropertyDefinitionList* (*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : *PropertyName* : *AssignmentExpression*.
- It is a Syntax Error if *PropertyAssignment* is the production *PropertyAssignment* : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* } and *PropertyDefinitionList* (*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : *PropertyName* : *AssignmentExpression*.

- It is a Syntax Error if *PropertyAssignment* is the production
 $PropertyAssignment : \mathbf{get} \ PropertyName () \{ FunctionBody \}$
and *PropertyDefinitionList* (*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form $PropertyAssignment : \mathbf{get} \ PropertyName () \{ FunctionBody \}$.
- It is a Syntax Error if *PropertyAssignment* is the production
 $PropertyAssignment : \mathbf{set} \ PropertyName (PropertySetParameterList) \{ FunctionBody \}$
and *PropertyDefinitionList* (*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form
 $PropertyAssignment : \mathbf{set} \ PropertyName (PropertySetParameterList) \{ FunctionBody \}$.

$PropertyAssignment : \mathbf{set} \ PropertyName (PropertySetParameterList) \{ FunctionBody \}$

- It is a Syntax Error if the source code matching this production is extended code and the *PropName* of *PropertyName* also occurs in the *VarDeclaredNames* of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and the *PropName* of *PropertyName* also occurs in the *LexicallyDeclaredNames* of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and any element of the *LexicallyDeclaredNames* of *PropertySetParameterList* also occurs in the *VarDeclaredNames* of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and any element of the *BoundNames* of *PropertySetParameterList* also occurs in the *LexicallyDeclaredNames* of *FunctionBody*.

$PropertySetParameterList : BindingPattern$

- It is a Syntax Error if the source code parsed with this production is not extended code.
- It is a Syntax Error if *BoundNames* of *BindingPattern* contains any duplicate elements.

Semantics: *PropertyDefinitionList*(*name*)

$PropertyAssignment : PropertyName : AssignmentExpression$

1. If *PropName* of *PropertyAssignment* is not *name* return the empty List.
2. Return a List containing *PropertyAssignment*.

$PropertyNameAndValueList : PropertyNameAndValueList , PropertyAssignment$

1. Let *previous* be *PropertyDefinitionList*(*name*) of *PropertyNameAndValueList*.
2. If *PropName* of *PropertyAssignment* is *name* then,
 - a. Append *PropertyAssignment* to the end of *previous*.
3. Return *previous*.

Semantics: *PropName*

$PropertyAssignment : IdentifierName$

1. Return *PropName*(*IdentifierName*).

$PropertyAssignment : PropertyName : AssignmentExpression$

1. Return *PropName*(*PropertyName*).

$PropertyAssignment : \mathbf{get} \ PropertyName () \{ FunctionBody \}$

1. Return *PropName*(*PropertyName*).

$PropertyAssignment : \mathbf{set} \ PropertyName (PropertySetParameterList) \{ FunctionBody \}$

1. Return `PropName(PropertyName)`.

PropertyName : *IdentifierName*

1. Return `PropName(IdentifierName)`.

PropertyName : *StringLiteral*

1. Return the SV of the *StringLiteral*.

PropertyName : *NumericLiteral*

1. Let *nbr* be the result of forming the value of the *NumericLiteral*.
2. Return `ToString(nbr)`.

The token *IdentifierName*

1. Return the String value containing the same sequence of characters as *IdentifierName*.

Semantics: `ExpectedArgumentCount`

PropertySetParameterList : *BindingIdentifier*

1. Return 1.

PropertySetParameterList : *BindingPattern*

1. Return 1.

Semantics: `HasInitialiser`

PropertySetParameterList : *BindingIdentifier*

1. Return **false**.

PropertySetParameterList : *BindingPattern*

1. Return **false**.

Semantics: `BoundNames`

PropertySetParameterList : *BindingIdentifier*

1. Return `BoundNames` of *BindingIdentifier*.

PropertySetParameterList : *BindingPattern*

1. Return `BoundNames` of *BindingPattern*.

Semantics: `Evaluation`

ObjectLiteral : { }

1. Return a new object created as if by the expression `new Object()` where `Object` is the standard built-in constructor with that name.

ObjectLiteral : { *PropertyNameAndValueList* }

ObjectLiteral : { *PropertyNameAndValueList* , }

1. Return the result of evaluating *PropertyNameAndValueList*.

PropertyNameAndValueList : *PropertyAssignment*

1. Let *obj* be the result of creating a new object as if by the expression **new Object()** where **Object** is the standard built-in constructor with that name.
2. Let *propId* be the result of evaluating *PropertyAssignment*.
3. Call the **[[DefineOwnProperty]]** internal method of *obj* with arguments *propId.name*, *propId.descriptor*, and **false**.
4. Return *obj*.

PropertyNameAndValueList : *PropertyNameAndValueList* , *PropertyAssignment*

1. Let *obj* be the result of evaluating *PropertyNameAndValueList*.
2. Let *propId* be the result of evaluating *PropertyAssignment*.
3. Call the **[[DefineOwnProperty]]** internal method of *obj* with arguments *propId.name*, *propId.descriptor*, and **false**.
4. Return *obj*.

PropertyAssignment : *IdentifierName*

1. Let *propName* be **PropName(IdentifierName)**.
2. Let *exprValue* be the result of performing Identifier Resolution as specified in 10.3.1 using *IdentifierName*.
3. Let *propValue* be **GetValue(exprValue)**.
4. Let *desc* be the Property Descriptor **{[[Value]]: propValue, [[Writable]]: true, [[Enumerable]]: true, [[Configurable]]: true}**
5. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : *PropertyName* : *AssignmentExpression*

1. Let *propName* be **PropName(PropertyName)**.
2. Let *exprValue* be the result of evaluating *AssignmentExpression*.
3. Let *propValue* be **GetValue(exprValue)**.
4. Let *desc* be the Property Descriptor **{[[Value]]: propValue, [[Writable]]: true, [[Enumerable]]: true, [[Configurable]]: true}**
5. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : **get** *PropertyName* () { *FunctionBody*

1. Let *propName* be **PropName(PropertyName)**.
2. Let *closure* be the result of creating a new Function object as specified in 13.2 with an empty parameter list and body specified by *FunctionBody*. Pass in the LexicalEnvironment of the running execution context as the *Scope*. Pass in **true** as the *Strict* flag if the *PropertyAssignment* is contained in strict code or if its *FunctionBody* is strict code.
3. Let *desc* be the Property Descriptor **{[[Get]]: closure, [[Enumerable]]: true, [[Configurable]]: true}**
4. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }

1. Let *propName* be **PropName(PropertyName)**.
2. Let *closure* be the result of creating a new Function object as specified in 13.2 with parameters specified by *PropertySetParameterList* and body specified by *FunctionBody*. Pass in the LexicalEnvironment of the running execution context as the *Scope*. Pass in **true** as the *Strict* flag if the *PropertyAssignment* is contained in strict code or if its *FunctionBody* is strict code.
3. Let *desc* be the Property Descriptor **{[[Set]]: closure, [[Enumerable]]: true, [[Configurable]]: true}**

4. Return Property Identifier (*propName*, *desc*).

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#3 The following is an experimental alternative presentation of the above section

This version is just like the previous experiment except each semantic term group has a numbered subsection that shows up in the table of contents/navigation pane.

11.1.5 Object Initialiser

NOTE An object initialiser is an expression describing the initialisation of an Object, written in a form resembling a literal. It is a list of zero or more pairs of property names and associated values, enclosed in curly braces. The values need not be literals; they are evaluated each time the object initialiser is evaluated.

11.1.5.1 Syntax

ObjectLiteral :

```
{ }  
{ PropertyNameAndValueList }  
{ PropertyNameAndValueList , }
```

PropertyNameAndValueList :

```
PropertyAssignment  
PropertyNameAndValueList , PropertyAssignment
```

PropertyAssignment :

```
IdentifierName  
PropertyName : AssignmentExpression  
PropertyName ( FormalParameterListopt ) { FunctionBody }  
get PropertyName ( ) { FunctionBody }  
set PropertyName ( PropertySetParameterList ) { FunctionBody }
```

PropertyName :

```
IdentifierName  
StringLiteral  
NumericLiteral
```

PropertySetParameterList :

```
BindingIdentifier  
BindingPattern
```

11.1.5.2 Static Semantics

PropertyNameAndValueList : *PropertyNameAndValueList* , *PropertyAssignment*

- It is a Syntax Error if this production is contained in strict code, *PropertyAssignment* is the production *PropertyAssignment* : *PropertyName* : *AssignmentExpression*, and *PropertyDefinitionList*(*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* is not the empty List.
- It is a Syntax Error if *PropertyAssignment* is the production *PropertyAssignment* : **get** *PropertyName* () { *FunctionBody* } and *PropertyDefinitionList* (*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : *PropertyName* : *AssignmentExpression*.
- It is a Syntax Error if *PropertyAssignment* is the production *PropertyAssignment* : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* } and *PropertyDefinitionList* (*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : *PropertyName* : *AssignmentExpression*.
- It is a Syntax Error if *PropertyAssignment* is the production *PropertyAssignment* : **get** *PropertyName* () { *FunctionBody* }

and PropertyDefinitionList (PropName of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : **get** *PropertyName* () { *FunctionBody* }.

- It is a Syntax Error if *PropertyAssignment* is the production

PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }

and PropertyDefinitionList (PropName of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form

PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }.

PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }

- It is a Syntax Error if the source code matching this production is extended code and the PropName of *PropertyName* also occurs in the VarDeclaredNames of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and the PropName of *PropertyName* also occurs in the LexicallyDeclaredNames of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and any element of the LexicallyDeclaredNames of *PropertySetParameterList* also occurs in the VarDeclaredNames of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and any element of the BoundNames of *PropertySetParameterList* also occurs in the LexicallyDeclaredNames of *FunctionBody*.

PropertySetParameterList : *BindingPattern*

- It is a Syntax Error if the source code parsed with this production is not extended code.
- It is a Syntax Error if BoundNames of *BindingPattern* contains any duplicate elements.

11.1.5.3 Semantics: PropertyDefinitionList(name)

PropertyAssignment : *PropertyName* : *AssignmentExpression*

1. If PropName of *PropertyAssignment* is not *name* return the empty List.
2. Return a List containing *PropertyAssignment*.

PropertyNameAndValueList : *PropertyNameAndValueList* , *PropertyAssignment*

1. Let *previous* be PropertyDefinitionList(*name*) of *PropertyNameAndValueList*.
2. If PropName of *PropertyAssignment* is *name* then,
 - a. Append *PropertyAssignment* to the end of *previous*.
3. Return *previous*.

11.1.5.4 Semantics: PropName

PropertyAssignment : *IdentifierName*

1. Return PropName(*IdentifierName*).

PropertyAssignment : *PropertyName* : *AssignmentExpression*

1. Return PropName(*PropertyName*).

PropertyAssignment : **get** *PropertyName* () { *FunctionBody* }

1. Return PropName(*PropertyName*).

PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }

1. Return `PropName(PropertyName)`.

PropertyName : *IdentifierName*

1. Return `PropName(IdentifierName)`.

PropertyName : *StringLiteral*

1. Return the SV of the *StringLiteral*.

PropertyName : *NumericLiteral*

1. Let *nbr* be the result of forming the value of the *NumericLiteral*.
2. Return `ToString(nbr)`.

The token *IdentifierName*

1. Return the String value containing the same sequence of characters as *IdentifierName*.

11.1.5.5 Semantics: ExpectedArgumentCount

PropertySetParameterList : *BindingIdentifier*

1. Return 1.

PropertySetParameterList : *BindingPattern*

1. Return 1.

11.1.5.6 Semantics: HasInitialiser

PropertySetParameterList : *BindingIdentifier*

1. Return **false**.

PropertySetParameterList : *BindingPattern*

1. Return **false**.

11.1.5.7 Semantics: BoundNames

PropertySetParameterList : *BindingIdentifier*

1. Return BoundNames of *BindingIdentifier*.

PropertySetParameterList : *BindingPattern*

1. Return BoundNames of *BindingPattern*.

11.1.5.8 Semantics: Evaluation

ObjectLiteral : { }

1. Return a new object created as if by the expression `new Object()` where **Object** is the standard built-in constructor with that name.

ObjectLiteral : { *PropertyNameAndValueList* }

ObjectLiteral : { *PropertyNameAndValueList* , }

1. Return the result of evaluating *PropertyNameAndValueList*.

PropertyNameAndValueList : *PropertyAssignment*

1. Let *obj* be the result of creating a new object as if by the expression **new Object()** where **Object** is the standard built-in constructor with that name.
2. Let *propId* be the result of evaluating *PropertyAssignment*.
3. Call the `[[DefineOwnProperty]]` internal method of *obj* with arguments *propId.name*, *propId.descriptor*, and **false**.
4. Return *obj*.

PropertyNameAndValueList : *PropertyNameAndValueList* , *PropertyAssignment*

1. Let *obj* be the result of evaluating *PropertyNameAndValueList*.
2. Let *propId* be the result of evaluating *PropertyAssignment*.
3. Call the `[[DefineOwnProperty]]` internal method of *obj* with arguments *propId.name*, *propId.descriptor*, and **false**.
4. Return *obj*.

PropertyAssignment : *IdentifierName*

1. Let *propName* be `PropName(IdentifierName)`.
2. Let *exprValue* be the result of performing Identifier Resolution as specified in 10.3.1 using *IdentifierName*.
3. Let *propValue* be `GetValue(exprValue)`.
4. Let *desc* be the Property Descriptor{`[[Value]]`: *propValue*, `[[Writable]]`: **true**, `[[Enumerable]]`: **true**, `[[Configurable]]`: **true**}
5. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : *PropertyName* : *AssignmentExpression*

1. Let *propName* be `PropName(PropertyName)`.
2. Let *exprValue* be the result of evaluating *AssignmentExpression*.
3. Let *propValue* be `GetValue(exprValue)`.
4. Let *desc* be the Property Descriptor{`[[Value]]`: *propValue*, `[[Writable]]`: **true**, `[[Enumerable]]`: **true**, `[[Configurable]]`: **true**}
5. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : **get** *PropertyName* () { *FunctionBody*

1. Let *propName* be `PropName(PropertyName)`.
2. Let *closure* be the result of creating a new Function object as specified in 13.2 with an empty parameter list and body specified by *FunctionBody*. Pass in the `LexicalEnvironment` of the running execution context as the *Scope*. Pass in **true** as the *Strict* flag if the *PropertyAssignment* is contained in strict code or if its *FunctionBody* is strict code.
3. Let *desc* be the Property Descriptor{`[[Get]]`: *closure*, `[[Enumerable]]`: **true**, `[[Configurable]]`: **true**}
4. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }

1. Let *propName* be `PropName(PropertyName)`.
2. Let *closure* be the result of creating a new Function object as specified in 13.2 with parameters specified by *PropertySetParameterList* and body specified by *FunctionBody*. Pass in the `LexicalEnvironment` of the

running execution context as the *Scope*. Pass in **true** as the *Strict* flag if the *PropertyAssignment* is contained in strict code or if its *FunctionBody* is strict code.

3. Let *desc* be the Property Descriptor{[[Set]]: *closure*, [[Enumerable]]: **true**, [[Configurable]]: **true**}
4. Return Property Identifier (*propName*, *desc*).

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#4 The following is an experimental alternative presentation of the above section

This version groups semantic definitions by the production that they relate to and labels each group with its production. It is most similar to the first presentation that is in the current draft.

11.1.5 Object Initialiser

NOTE An object initialiser is an expression describing the initialisation of an Object, written in a form resembling a literal. It is a list of zero or more pairs of property names and associated values, enclosed in curly braces. The values need not be literals; they are evaluated each time the object initialiser is evaluated.

Syntax

ObjectLiteral :

```
{ }  
{ PropertyNameAndValueList }  
{ PropertyNameAndValueList , }
```

PropertyNameAndValueList :

```
PropertyAssignment  
PropertyNameAndValueList , PropertyAssignment
```

PropertyAssignment :

```
IdentifierName  
PropertyName : AssignmentExpression  
PropertyName ( FormalParameterListopt ) { FunctionBody }  
get PropertyName ( ) { FunctionBody }  
set PropertyName ( PropertySetParameterList ) { FunctionBody }
```

PropertyName :

```
IdentifierName  
StringLiteral  
NumericLiteral
```

PropertySetParameterList :

```
BindingIdentifier  
BindingPattern
```

Semantics

ObjectLiteral : { }

The production is evaluated as follows:

1. Return a new object created as if by the expression **new Object()** where **Object** is the standard built-in constructor with that name.

ObjectLiteral : { *PropertyNameAndValueList* }

ObjectLiteral : { *PropertyNameAndValueList* , }

The production is evaluated as follows:

1. Return the result of evaluating *PropertyNameAndValueList*.

PropertyAssignment : *PropertyName* : *AssignmentExpression*

The *PropertyDefinitionList*(*name*) of the production is determined as follows:

1. If *PropName* of *PropertyAssignment* is not *name* return the empty List.
2. Return a List containing *PropertyAssignment*.

PropertyNameAndValueList : *PropertyAssignment*

The production is evaluated as follows:

1. Let *obj* be the result of creating a new object as if by the expression **new** *Object*() where *Object* is the standard built-in constructor with that name.
2. Let *propId* be the result of evaluating *PropertyAssignment*.
3. Call the [[DefineOwnProperty]] internal method of *obj* with arguments *propId.name*, *propId.descriptor*, and **false**.
4. Return *obj*.

PropertyNameAndValueList : *PropertyNameAndValueList* , *PropertyAssignment*

The static semantics are:

- It is a Syntax Error if this production is contained in strict code, *PropertyAssignment* is the production *PropertyAssignment* : *PropertyName* : *AssignmentExpression*, and *PropertyDefinitionList*(*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* is not the empty List.
- It is a Syntax Error if *PropertyAssignment* is the production
PropertyAssignment : **get** *PropertyName* () { *FunctionBody* }
and *PropertyDefinitionList* (*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : *PropertyName* : *AssignmentExpression*.
- It is a Syntax Error if *PropertyAssignment* is the production
PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }
and *PropertyDefinitionList* (*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : *PropertyName* : *AssignmentExpression*.
- It is a Syntax Error if *PropertyAssignment* is the production
PropertyAssignment : **get** *PropertyName* () { *FunctionBody* }
and *PropertyDefinitionList* (*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : **get** *PropertyName* () { *FunctionBody* }.
- It is a Syntax Error if *PropertyAssignment* is the production
PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }
and *PropertyDefinitionList* (*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form
PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }.

PropertyDefinitionList(*name*) of the production is determined as follows:

1. Let *previous* be *PropertyDefinitionList*(*name*) of *PropertyNameAndValueList*.
2. If *PropName* of *PropertyAssignment* is *name* then,
 - b. Append *PropertyAssignment* to the end of *previous*.
3. Return *previous*.

The production is evaluated as follows:

1. Let *obj* be the result of evaluating *PropertyNameAndValueList*.
2. Let *propId* be the result of evaluating *PropertyAssignment*.
3. Call the [[DefineOwnProperty]] internal method of *obj* with arguments *propId.name*, *propId.descriptor*, and **false**.
4. Return *obj*.

PropertyAssignment : *IdentifierName*

PropName of the production is determined as follows:

1. Return PropName(*IdentifierName*).

The production is evaluated as follows:

1. Let *propName* be PropName(*IdentifierName*).
2. Let *exprValue* be the result of performing Identifier Resolution as specified in 10.3.1 using *IdentifierName*.
3. Let *propValue* be GetValue(*exprValue*).
4. Let *desc* be the Property Descriptor{[[Value]]: *propValue*, [[Writable]]: **true**, [[Enumerable]]: **true**, [[Configurable]]: **true**}
5. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : *PropertyName* : *AssignmentExpression*

PropName of the production is determined as follows:

1. Return PropName(*PropertyName*).

The production is evaluated as follows:

1. Let *propName* be PropName(*PropertyName*).
2. Let *exprValue* be the result of evaluating *AssignmentExpression*.
3. Let *propValue* be GetValue(*exprValue*).
4. Let *desc* be the Property Descriptor{[[Value]]: *propValue*, [[Writable]]: **true**, [[Enumerable]]: **true**, [[Configurable]]: **true**}
5. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : **get** *PropertyName* () { *FunctionBody* }

PropName of the production is determined as follows:

1. Return PropName(*PropertyName*).

The production is evaluated as follows:

1. Let *propName* be PropName(*PropertyName*).
2. Let *closure* be the result of creating a new Function object as specified in 13.2 with an empty parameter list and body specified by *FunctionBody*. Pass in the LexicalEnvironment of the running execution context as the *Scope*. Pass in **true** as the *Strict* flag if the *PropertyAssignment* is contained in strict code or if its *FunctionBody* is strict code.
3. Let *desc* be the Property Descriptor{[[Get]]: *closure*, [[Enumerable]]: **true**, [[Configurable]]: **true**}
4. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }

The static semantics are:

- It is a Syntax Error if the source code matching this production is extended code and the PropName of *PropertyName* also occurs in the VarDeclaredNames of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and the PropName of *PropertyName* also occurs in the LexicallyDeclaredNames of *FunctionBody*.

- It is a Syntax Error if the source code matching this production is extended code and any element of the *LexicallyDeclaredNames* of *PropertySetParameterList* also occurs in the *VarDeclaredNames* of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and any element of the *BoundNames* of *PropertySetParameterList* also occurs in the *LexicallyDeclaredNames* of *FunctionBody*.

PropName of the production is determined as follows:

1. Return PropName(*PropertyName*).

The production is evaluated as follows:

1. Let *propName* be PropName(*PropertyName*).
2. Let *closure* be the result of creating a new Function object as specified in 13.2 with parameters specified by *PropertySetParameterList* and body specified by *FunctionBody*. Pass in the *LexicalEnvironment* of the running execution context as the *Scope*. Pass in **true** as the *Strict* flag if the *PropertyAssignment* is contained in strict code or if its *FunctionBody* is strict code.
3. Let *desc* be the Property Descriptor {[[Set]]: *closure*, [[Enumerable]]: **true**, [[Configurable]]: **true**}
4. Return Property Identifier (*propName*, *desc*).

PropertyName : *IdentifierName*

PropName of the production is determined as follows:

1. Return PropName(*IdentifierName*).

PropertyName : *StringLiteral*

PropName of the production is determined as follows:

1. Return the SV of the *StringLiteral*.

PropertyName : *NumericLiteral*

PropName of the production is determined as follows:

1. Let *nbr* be the result of forming the value of the *NumericLiteral*.
2. Return ToString(*nbr*).

IdentifierName

PropName of the token is determined as follows:

1. Return the String value containing the same sequence of characters as *IdentifierName*.

PropertySetParameterList : *BindingIdentifier*

ExpectedArgumentCount of the production is determined as follows:

1. Return 1.

HasInitialiser of the production is determined as follows:

1. Return **false**.

BoundNames of the production is determined as follows:

1. Return BoundNames of *BindingIdentifier*.

PropertySetParameterList : *BindingPattern*

The static semantics are:

- It is a Syntax Error if the source code parsed with this production is not extended code.
- It is a Syntax Error if BoundNames of *BindingPattern* contains any duplicate elements.

ExpectedArgumentCount of the production is determined as follows:

1. Return 1.

HasInitialiser of the production is determined as follows:

1. Return **false**.

BoundNames of the production is determined as follows:

1. Return BoundNames of *BindingPattern*.

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#5 The following is an experimental alternative presentation of this section

This version is just like experiment 3 except that there are only three numbered subsections, syntax, static semantics, and runtime semantics. Bold subheadings are used to identify each group of related definitions within a subsection. Semantic functions that only depend upon static characteristics of the program text are placed in the static semantics section.

11.1.5 Object Initialiser

NOTE An object initialiser is an expression describing the initialisation of an Object, written in a form resembling a literal. It is a list of zero or more pairs of property names and associated values, enclosed in curly braces. The values need not be literals; they are evaluated each time the object initialiser is evaluated.

11.1.5.1 Syntax

ObjectLiteral :

```
{ }  
{ PropertyNameAndValueList }  
{ PropertyNameAndValueList , }
```

PropertyNameAndValueList :

```
PropertyAssignment  
PropertyNameAndValueList , PropertyAssignment
```

PropertyAssignment :

```
IdentifierName  
PropertyName : AssignmentExpression  
PropertyName ( FormalParameterListopt ) { FunctionBody }  
get PropertyName ( ) { FunctionBody }  
set PropertyName ( PropertySetParameterList ) { FunctionBody }
```

PropertyName :

```
IdentifierName  
StringLiteral  
NumericLiteral
```

PropertySetParameterList :

```
BindingIdentifier  
BindingPattern
```

11.1.5.2 Static Semantics

Early Errors

PropertyNameAndValueList : *PropertyNameAndValueList* , *PropertyAssignment*

- It is a Syntax Error if this production is contained in strict code, *PropertyAssignment* is the production *PropertyAssignment* : *PropertyName* : *AssignmentExpression*, and *PropertyDefinitionList*(*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* is not the empty List.
- It is a Syntax Error if *PropertyAssignment* is the production *PropertyAssignment* : **get** *PropertyName* () { *FunctionBody* } and *PropertyDefinitionList* (*PropName* of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : *PropertyName* : *AssignmentExpression*.
- It is a Syntax Error if *PropertyAssignment* is the production *PropertyAssignment* : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }

and PropertyDefinitionList (PropName of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : *PropertyName* : *AssignmentExpression*.

- It is a Syntax Error if *PropertyAssignment* is the production
PropertyAssignment : **get** *PropertyName* () { *FunctionBody* }
and PropertyDefinitionList (PropName of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form *PropertyAssignment* : **get** *PropertyName* () { *FunctionBody* }.
- It is a Syntax Error if *PropertyAssignment* is the production
PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }
and PropertyDefinitionList (PropName of *PropertyAssignment*) of *PropertyNameAndValueList* includes a production of the form
PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }.

PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }

- It is a Syntax Error if the source code matching this production is extended code and the PropName of *PropertyName* also occurs in the VarDeclaredNames of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and the PropName of *PropertyName* also occurs in the LexicallyDeclaredNames of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and any element of the LexicallyDeclaredNames of *PropertySetParameterList* also occurs in the VarDeclaredNames of *FunctionBody*.
- It is a Syntax Error if the source code matching this production is extended code and any element of the BoundNames of *PropertySetParameterList* also occurs in the LexicallyDeclaredNames of *FunctionBody*.

PropertySetParameterList : *BindingPattern*

- It is a Syntax Error if the source code parsed with this production is not extended code.
- It is a Syntax Error if BoundNames of *BindingPattern* contains any duplicate elements.

Static Semantics: PropertyDefinitionList(name)

PropertyAssignment : *PropertyName* : *AssignmentExpression*

1. If PropName of *PropertyAssignment* is not *name* return the empty List.
2. Return a List containing *PropertyAssignment*.

PropertyNameAndValueList : *PropertyNameAndValueList* , *PropertyAssignment*

1. Let *previous* be PropertyDefinitionList(*name*) of *PropertyNameAndValueList*.
2. If PropName of *PropertyAssignment* is *name* then,
 - b. Append *PropertyAssignment* to the end of *previous*.
3. Return *previous*.

Static Semantics: PropName

PropertyAssignment : *IdentifierName*

1. Return PropName(*IdentifierName*).

PropertyAssignment : *PropertyName* : *AssignmentExpression*

1. Return PropName(*PropertyName*).

PropertyAssignment : **get** *PropertyName* () { *FunctionBody* }

1. Return *PropName(PropertyName)*.

PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }

1. Return *PropName(PropertyName)*.

PropertyName : *IdentifierName*

1. Return *PropName(IdentifierName)*.

PropertyName : *StringLiteral*

1. Return the SV of the *StringLiteral*.

PropertyName : *NumericLiteral*

1. Let *nbr* be the result of forming the value of the *NumericLiteral*.
2. Return *ToString(nbr)*.

The token *IdentifierName*

1. Return the String value containing the same sequence of characters as *IdentifierName*.

Static Semantics: ExpectedArgumentCount

PropertySetParameterList : *BindingIdentifier*

1. Return 1.

PropertySetParameterList : *BindingPattern*

1. Return 1.

Static Semantics: HasInitialiser

PropertySetParameterList : *BindingIdentifier*

1. Return **false**.

PropertySetParameterList : *BindingPattern*

1. Return **false**.

Static Semantics: BoundNames

PropertySetParameterList : *BindingIdentifier*

1. Return BoundNames of *BindingIdentifier*.

PropertySetParameterList: *BindingPattern*

1. Return BoundNames of *BindingPattern*.

11.1.5.3 Runtime Semantics

Runtime Semantics: Evaluation

ObjectLiteral : { }

1. Return a new object created as if by the expression **new Object()** where **Object** is the standard built-in constructor with that name.

ObjectLiteral : { *PropertyNameAndValueList* }

ObjectLiteral : { *PropertyNameAndValueList* , }

1. Return the result of evaluating *PropertyNameAndValueList*.

PropertyNameAndValueList : *PropertyAssignment*

1. Let *obj* be the result of creating a new object as if by the expression **new Object()** where **Object** is the standard built-in constructor with that name.
2. Let *propId* be the result of evaluating *PropertyAssignment*.
3. Call the `[[DefineOwnProperty]]` internal method of *obj* with arguments *propId.name*, *propId.descriptor*, and **false**.
4. Return *obj*.

PropertyNameAndValueList : *PropertyNameAndValueList* , *PropertyAssignment*

1. Let *obj* be the result of evaluating *PropertyNameAndValueList*.
2. Let *propId* be the result of evaluating *PropertyAssignment*.
3. Call the `[[DefineOwnProperty]]` internal method of *obj* with arguments *propId.name*, *propId.descriptor*, and **false**.
4. Return *obj*.

PropertyAssignment : *IdentifierName*

1. Let *propName* be `PropName(IdentifierName)`.
2. Let *exprValue* be the result of performing Identifier Resolution as specified in 10.3.1 using *IdentifierName*.
3. Let *propValue* be `GetValue(exprValue)`.
4. Let *desc* be the Property Descriptor{`[[Value]]`: *propValue*, `[[Writable]]`: **true**, `[[Enumerable]]`: **true**, `[[Configurable]]`: **true**}
5. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : *PropertyName* : *AssignmentExpression*

1. Let *propName* be `PropName(PropertyName)`.
2. Let *exprValue* be the result of evaluating *AssignmentExpression*.
3. Let *propValue* be `GetValue(exprValue)`.
4. Let *desc* be the Property Descriptor{`[[Value]]`: *propValue*, `[[Writable]]`: **true**, `[[Enumerable]]`: **true**, `[[Configurable]]`: **true**}
5. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : **get** *PropertyName* () { *FunctionBody*

1. Let *propName* be `PropName(PropertyName)`.
2. Let *closure* be the result of creating a new Function object as specified in 13.2 with an empty parameter list and body specified by *FunctionBody*. Pass in the `LexicalEnvironment` of the running execution context as the

Scope. Pass in **true** as the *Strict* flag if the *PropertyAssignment* is contained in strict code or if its *FunctionBody* is strict code.

3. Let *desc* be the Property Descriptor{[[Get]]: *closure*, [[Enumerable]]: **true**, [[Configurable]]: **true**}
4. Return Property Identifier (*propName*, *desc*).

PropertyAssignment : **set** *PropertyName* (*PropertySetParameterList*) { *FunctionBody* }

1. Let *propName* be PropName(*PropertyName*).
2. Let *closure* be the result of creating a new Function object as specified in 13.2 with parameters specified by *PropertySetParameterList* and body specified by *FunctionBody*. Pass in the LexicalEnvironment of the running execution context as the *Scope*. Pass in **true** as the *Strict* flag if the *PropertyAssignment* is contained in strict code or if its *FunctionBody* is strict code.
3. Let *desc* be the Property Descriptor{[[Set]]: *closure*, [[Enumerable]]: **true**, [[Configurable]]: **true**}
4. Return Property Identifier (*propName*, *desc*).

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