

Review of Actions sub-types proposed for Schema.org

Owner: thor@google.com

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Introduction

This doc reviews the core list of Action sub-types proposed for schema.org in Draft 3.1 of the Actions in Schema.org spec. A copy of this draft is available [here](#).

Antonyms and logical pairs

The proposed verbs are listed below with any verbs that are logically paired with them, or antonyms of them. The goal is to avoid developers having WTF? moments when they realise that we support a verb without supporting another verb that it is logically paired with. **Green** indicates that the pair is in the Current proposal. **Red** that it is not. Feel free to add any antonyms or logical pairs that you feel have been missed.

Action	Logical pair / antonym
AcceptAction	Reject
AccessAction	
AcknowledgeAction	Ignore
AddAction	Remove
AgreeAction	Disagree
AppendAction	
ApproveAction	Disapprove, Reject
ArchiveAction	
AssignAction	Unassign
AtAction	
AttachAction	Detach, Unattach
AttendAction	
AuthorAction	
AuthorizeAction	Forbid, Unauthorize
BefriendAction	Unfriend
BorrowAction	Lend
BuildAction	Demolish, Destroy
BuyAction	Sell
CancelAction	
CheckInAction	Check Out

CloseAction	Open
CompleteAction	
CommentAction	
ConfirmAction	Refute, Deny
ConsumeAction	Produce
CreateAction	Destroy
DeleteAction	Undelete
DeliverAction	Send, Ship, Receive
DenyAction	Allow, Permit, Confirm
DisagreeAction	Agree
DiscoverAction	
DislikeAction	Like
DownloadAction	Upload
DriveAction	
ExperienceAction	
FindAction	Lose
FollowAction	Unfollow
GiveAction	Receive, Accept
HostAction	
IgnoreAction	Acknowledge
InsertAction	Remove
InstallAction	Uninstall
InteractAction	
InviteAction	Uninvite
JoinAction	Separate, Leave
LeaveAction	Arrive, Join
LikeAction	Dislike
ListenAction	Watch, Play, Perform, Speak, Talk
LogInAction	Log out
LogOutAction	Log in
LoseAction	Find, Win
OpenAction	Close
PickUpAction	Drop, Set down
PlayAction	Listen

PresentAction	
PurchaseAction	Sell
QualifyAction	Disqualify, Fail
ReadAction	Write
ReceiveAction	Donate, Give, Deliver, Send
RejectAction	Accept
RemoveAction	Add
RenewAction	
RentAction	
ReplaceAction	
RequestAction	Respond
ReserveAction	
ResolveAction	
RetractAction	
ReturnAction	
ReviewAction	
RideAction	
RsvpAction	
SatisfyAction	Dissatisfy
SaveAction	Load, Open
ScheduleAction	
SearchAction	
SellAction	Buy
SendAction	Receive
ShareAction	
ShipAction	Deliver
SponsorAction	
SubmitAction	
SubscribeAction	Unsubscribe
TagAction	Untag
TerminateAction	
TieAction	
TravelAction	
UpdateAction	

UseAction	
ViewAction	
VisitAction	
WalkAction	
WantAction	
WatchAction	Listen
WinAction	Lose

Synonyms

The below table lists cases where more than one of the proposed verb could be used to mean the same thing. We need to provide clarification as to the intended usage of these verbs if we want to ensure that they are used consistently. For examples of the conflicts, see the next section. Feel free to add any Synonyms you feel have been missed.

Action	Synonym
AcceptAction	AcknowledgeAction, AgreeAction, ApproveAction, ConfirmAction, ReceiveAction
AccessAction	OpenAction
AcknowledgeAction	AcceptAction
AddAction	InsertAction
AgreeAction	AcceptAction, ConfirmAction, ApproveAction
AppendAction	
ApproveAction	AcceptAction, AgreeAction, ConfirmAction, LikeAction
ArchiveAction	
AssignAction	
AtAction	VisitAction, CheckInAction, AttendAction
AttachAction	
AttendAction	JoinAction, AtAction, CheckInAction
AuthorAction	CommentAction, CreateAction
AuthorizeAction	
BefriendAction	FollowAction
BorrowAction	
BuildAction	CreateAction
BuyAction	PurchaseAction
CancelAction	DenyAction, RejectAction
CheckInAction	VisitAction, AtAction, AttendAction
CloseAction	TerminateAction
CompleteAction	
CommentAction	AuthorAction
ConfirmAction	AcceptAction, AgreeAction, ApproveAction
ConsumeAction	
CreateAction	BuildAction, AuthorAction

DeleteAction	RemoveAction
DeliverAction	SendAction, ShipAction
DenyAction	RejectAction, CancelAction, DisagreeAction
DisagreeAction	DenyAction, RejectAction, DislikeAction
DiscoverAction	SearchAction, FindAction
DislikeAction	DisagreeAction
DownloadAction	SaveAction
DriveAction	
ExperienceAction	
FindAction	SearchAction, DiscoverAction
FollowAction	BefriendAction
GiveAction	PresentAction
HostAction	
IgnoreAction	
InsertAction	AddAction
InstallAction	
InteractAction	
InviteAction	
JoinAction	AttendAction
LeaveAction	
LikeAction	WantAction, ApproveAction
ListenAction	PlayAction
LogInAction	
LogOutAction	
LoseAction	
OpenAction	
PickUpAction	
PlayAction	ListenAction
PresentAction	GiveAction
PurchaseAction	BuyAction
QualifyAction	SatisfyAction
ReadAction	
ReceiveAction	AcceptAction
RejectAction	CancelAction, DenyAction, DisagreeAction

RemoveAction	DeleteAction
RenewAction	
RentAction	
ReplaceAction	
RequestAction	SubmitAction
ReserveAction	ScheduleAction
ResolveAction	
RetractAction	
ReturnAction	
ReviewAction	
RideAction	
RsvpAction	
SatisfyAction	QualifyAction
SaveAction	DownloadAction
ScheduleAction	ReserveAction
SearchAction	FindAction
SellAction	
SendAction	ShipAction, DeliverAction
ShareAction	
ShipAction	DeliverAction, SendAction
SponsorAction	
SubmitAction	RequestAction
SubscribeAction	
TagAction	
TerminateAction	CloseAction
TieAction	
TravelAction	
UpdateAction	
UseAction	
ViewAction	WatchAction
VisitAction	AtAction, CheckInAction
WalkAction	
WantAction	LikeAction
WatchAction	ViewAction

WinAction	
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Usage samples

For each proposed verb, the below table lists examples of how each could be used. Entries in plain black are presumed to be acceptable usage. Entries in **red** are not recommended usage. Points of discussion are in **blue**. Please add comments to respond to points of discussion, or object to a particular usage. Also feel free to add additional usages that you feel are distinct and instructive.

Here is a good [tool](#) for classification.

Action	Usage
AcceptAction	<p>Jane (agent) accepted the award (target) (use ReceiveAction) Jane (agent) accepted the terms of service (target) Jane (agent) accepted the apology (target) Jane (agent) accepted a task (target) Jane (agent) accepted John's (?) opinion (target) Jane (agent) accepted her medical condition (target) Jane (agent) accepted the bug (target) Jane accepted the delivery (use ReceiveAction)</p>
AccessAction	<p>Jane (agent) accessed the file (target) (use OpenAction?) Jane (agent) accessed the building (target) (use CheckInAction?) Jane (agent) accessed John's computer (target) (use LogInAction?)</p>
AcknowledgeAction	<p>Jane (agent) acknowledged the warning message (target/theme) Jane (agent) acknowledged John (target/theme) Jane (agent) acknowledged the bug (target/theme) Jane (agent) acknowledged God (target/theme)</p>
AddAction	<p>Jane (a) added the movie (target) to her playlist (co-target) Jane (a) added the bread (target) to her shopping basket (co-target) Jane (a) added sugar (target) to a cake (co-target) Jane (a) added 2 (target) and 2 (coTarget) Jane (a) added Java (target) to her skills (co-target) Jane added John on Facebook (use BefriendAction) Jane added John to the Event (use InviteAction)</p>
AgreeAction	<p>Jane agreed to the terms of service (use AcceptAction) Jane agreed to attend the event (use RSVPAction) Jane (a) agreed with John's comment (target, target.author = John) (use LikeAction?) Jane (a) agreed with the political cause (target) Jane (a) agreed to donate money (target)</p>
AppendAction	<p>Jane appended the movie to her playlist (use AddAction)</p>
ApproveAction	<p>Jane (a) approved of John's comment (target) (use AgreeAction or LikeAction?) Jane (a) approved of John's change list (target)</p>
ArchiveAction	<p>Jane (a) archived the file (target)</p>
AssignAction	<p>Jane assigned the project Jane assigned the bug</p>
AtAction	<p>Jane was at the mall (use CheckInAction) Jane was at the event (use AttendAction) Jane was at home Jane was at Paris (use VisitAction)</p>

AttachAction	Jane (a) attached a video (target) to the message (recipient) Jane (a) was attached to John (target) Jane attached a hose to a faucet
AttendAction	Jane attended the event Jane attended the class Jane attended Stanford University Jane attended a meeting
AuthorAction	Jane authored the document Jane authored the song Jane authored the comment (use CommentAction)
AuthorizeAction	Jane authorized access to her friends list Jane authorized John to manage her calendar
BefriendAction	Jane befriended John on Facebook
BorrowAction	Jane borrowed the book
BuildAction	Jane built the sandcastle Jane built the source code Jane built the tension (restrict to physical building only?)
BuyAction	Jane bought the song (use PurchaseAction?) Jane bought the argument (restrict to purchasing only?)
CancelAction	Jane cancelled the event Jane cancelled the dialog box
CheckInAction	Jane checked in to the restaurant Jane checked in to the hotel Jane checked in to the flight (restrict to fixed Places only?) Jane checked in to rehab (restrict to specific Places only?)
CloseAction	Jane closed the window Jane closed the dialog box Jane closed the concert (disallow use as a synonym for Ended?) Jane closed her arguments (disallow use as a synonym for Ended?) Jane was close to John (restrict to use in the manner that rhymes with "flows" and not "dose"?).
CompleteAction	Jane completed the game Jane completed the sale of her house
CommentAction	Jane commented on the article Jane commented on the YouTube video (is a Tweet, FB post, or G+ post in which the poster comments about a video a CommentAction?) Jane commented on the News
ConfirmAction	Jane confirmed her attendance at the party (use RSVPAction) Jane confirmed her acceptance of the Terms of Service (use AcceptAction) Jane confirmed her date of birth
ConsumeAction	Jane consumed the banana Jane consumed the news story (restrict to eating?)
CreateAction	Jane created the blog post Jane created the policy Jane created the painting Jane created the restaurant review (use ReviewAction)
DeleteAction	Jane deleted the file
DeliverAction	Jane delivered the package

	Jane delivered the good news (restrict to physical deliveries?)
DenyAction	Jane denied John's request to borrow the book Jane denied watching the movie Jane denied access to her friend list
DisagreeAction	Jane disagreed with John's comment (use DislikeAction?) Jane disagreed with the political cause
DiscoverAction	Jane discovered a great website Jane discovered a popular bar Jane discovered a new planet Jane discovered the cure for cancer
DislikeAction	Jane disliked the article (target) Jane disliked the comment (target) Jane disliked John Jane disliked riding the camel Jane disliked <any verb> the <any object>
DownloadAction	Jane downloaded the song Jane downloaded the PDF
DriveAction	Jane drove the car Jane drove the discussion
ExperienceAction	Jane experienced the rollercoaster (use RideAction) Jane experienced the concert (use AttendedAction) Jane experienced the party (use AttendedAction) Jane experienced the Solar Eclipse Jane experienced regret (do we allow feelings?) Jane experienced Paris (use VisitAction)
FindAction	Jane found her keys Jane found her calling (limit to specific online or offline items?) Jane found out that her car was ready (use DiscoverActivity?)
FollowAction	Jane followed the celebrity on Google+ Jane followed her friend John on Twitter Jane followed John on the schedule (disallow as a synonym for "was next"?)
GiveAction	Jane gave \$1 to the Red Cross Jane gave permission to access her account (use ApproveAction) Jane (a) gave John (co-agent/recipient) a discount coupon (target) Jane gave John a birthday present Jane gave John kudos (limit to material / monetary items?)
HostAction	Jane hosted a party
IgnoreAction	Jane ignored John Jane ignored the chat message Jane ignored the event invitation
InsertAction	Jane inserted money into the meter Jane inserted a paragraph into the document Jane inserted herself into the conversation
InstallAction	Jane installed Foursquare Jane installed a new dishwasher Jane installed phone service
InteractAction	Jane interacted with John
InviteAction	Jane invited John to the event

JoinAction	Jane joined the event (use AttendAction) Jane joined the Google Group Jane joined the Republican Party
LeaveAction	Jane left the event Jane left her purse in the taxi Jane left the Google Group Jane left the Girl Scouts Jane left the video chat
LikeAction	Jane liked a post on Facebook Jane liked a movie trailer Jane likes a MacBook Air that she owns Jane liked a brand on Facebook (use FollowAction) Jane likes a camera on Amazon (use WantAction) Jane liked watching the movie Jane liked listening to the song Jane liked <any verb> the <any object>
ListenAction	Jane listened to "Purple Rain" on Spotify Jane listened to "Purple Rain" on her iPod Jane listened to a Coldplay concert in person (use AttendAction) Jane listened to a Coldplay concert on the radio
LogInAction	Jane logged in to Foursquare Jane logged in to her laptop
LogOutAction	Jane logged out of Foursquare Jane logged out of her laptop
LoseAction	Jane lost her phone (limit to winning/losing as opposed to finding/losing?) Jane lost the game of scrabble
OpenAction	Jane opened the file Jane opened the concert (do not permit as a synonym for "Started"?) Jane opened the package Jane opened the closet Jane opened the new library
PickUpAction	Jane picked up John at a bar (limit to physical objects?) Jane picked up the pizza she had ordered Jane picked up how to speak French (disallow use as a synonym for Learned?) Jane picked up her mother from the station (limit to physical objects?)
PlayAction	Jane played Angry Birds Jane played Football Jane played "Purple Rain" on her iPod (use ListenAction) Jane played "Purple Rain" on Spotify (use ListenAction) Jane played "Purple Rain" on a guitar
PresentAction	Jane presented the slide deck Jane presented the gift
PurchaseAction	Jane purchased the book
QualifyAction	Jane qualified for the discount Jane qualified as a lawyer
ReadAction	Jane read the book
ReceiveAction	Jane received the parcel Jane received the award
RejectAction	Jane rejected John as a candidate Jane rejected John's request to borrow the book (use DenyAction)

	Jane rejected John's argument (use DisagreeAction) Jane rejected the Terms of Service
RemoveAction	Jane removed her sunglasses Jane removed the file from her phone (use DeleteAction)
RenewAction	Jane renewed a subscription to Time
RentAction	Jane rented an apartment from John Jane rented an apartment to John (do we require that the subject be the person who rents from another?)
ReplaceAction	Jane replaced John as the manager Jane replaced her car
RequestAction	Jane requested a table at the restaurant Jane requested to borrow the book Jane requested to <any verb> the <any object> Jane requested that John play the song Jane requested that <any person> <any verb> the <any object>
ReserveAction	Jane reserved a restaurant table Jane reserved a PlayStation 4 Jane reserved judgement
ResolveAction	Jane resolved her disagreement Jane resolved to watch the movie (permit as a synonym for decided?)
RetractAction	Jane retracted her comment Jane retracted her support Jane retracted her offer
ReturnAction	Jane returned the book she has borrowed Jane returned home Jane returned the favour
ReviewAction	Jane reviewed the restaurant Jane reviewed the book
RideAction	Jane rode the rollercoaster Jane rode a horse Jane rode a wave
RsvpAction	Jane RSVP'd to the event
SatisfyAction	Jane satisfied the requirements (use QualifyAction) Jane was satisfied by the movie
SaveAction	Jane saved the PDF Jane saved the date (use ScheduleAction) Jane saved the Whales
ScheduleAction	Jane scheduled a meeting for 4pm Jane scheduled a dinner reservation for 7pm (use ReserveAction)
SearchAction	Jane searched for "restaurants near me" Jane searched for John
SellAction	Jane sold the camera Jane sold the vision
SendAction	Jane sent a package (use ShipAction) Jane sent a letter Jane sent an email Jane sent her condolences

ShareAction	Jane shared the Facebook post Jane shared her feelings Jane shared the winnings (limit to 'disclosing socially' rather than 'distributing amongst?')
ShipAction	Jane shipped a package Jane shipped a product (limit to physical shipments rather than launches?)
SponsorAction	Jane sponsored John in a charity run Jane sponsored a project at work
SubmitAction	Jane submitted a license application Jane submitted an online form Jane submitted to a customs inspection
SubscribeAction	Jane subscribed to Time magazine Jane subscribed to Macys emails Jane subscribed to a RSS feed
TagAction	Jane tagged John in a photo Jane tagged an email
TerminateAction	Jane terminated her session Jane terminated her game Jane terminated her video chat
TieAction	Jane tied with John at Chess
TravelAction	Jane travelled to work Jane travelled to Paris
UpdateAction	Jane updated her version of Photoshop Jane updated John on the project status Jane updated her look Jane updated Facebook Jane updated her profile photo
UseAction	Jane used a camera Jane used Instagram Jane used drugs
ViewAction	Jane viewed a YouTube video (use WatchAction) Jane viewed a concert in person (use AttendAction) Jane viewed a TV show (use WatchAction) Jane viewed a Movie (use WatchAction) Jane viewed a sunset Jane viewed an art installation
VisitAction	Jane visited Paris Jane visited the Louvre (use CheckInAction) Jane visited the Doctor
WalkAction	Jane walked from home to the railway station Jane walked up a mountain Jane walked along a nature trail
WantAction	Jane wants a MacBook Air Jane wants to see a movie Jane wants to <any verb> the <any object>
WatchAction	Jane watched a YouTube video Jane watched a TV show Jane watched a movie
WinAction	Jane won the Game Jane won the Lottery

Jane won the Lawsuit

Potential omissions

The following verbs are not included in the current proposal, but may merit inclusion. The list was compiled by scanning through all ~27,700 entries in the [English verbs category](http://en.wiktionary.org/) of <http://en.wiktionary.org/>, and selecting commonly used or potentially useful verbs that are not included in the current proposal. Obviously with that many to scan through some were inevitably missed, but we can at least feel comfortable that a basic level of due diligence has been done.

The “Closest equivalent” column indicates the verb in the current proposal that is closest in meaning, and would probably be used by developers to represent the action concerned if no changes are made. “Alternative synonyms” are alternative names for the same verb that you may find preferable, or might like to see also added. Feel free to add more, and indicate if you prefer one by adding a comment to the doc.

Note that I’m not suggesting we should add all of these verbs. Just that they merit consideration. Please indicate those that you think merit addition to the proposal by adding your initial in the “Votes” column:

- Thor: T
- Sam: S
- Yaar: Y
- Fabian: F
- Ling: L

Feel free to add other voters to the above list and share the doc with them.

Conversation

Verbs relating to conversations or discussions, as seen on social networks, social apps, and in email clients.

Verb	Usage example	Closest equivalent	Alternative synonyms	Votes
Ask	Jane asked a question on Quora	Search Find		T
Reply	Jane replied to a question on Quora		Respond Answer	T
Say	Jane said “It’s hot today!”		Speak Announce	T
Chat	Jane chatted with John		Talk Discuss Converse	T
Shout	Jane shouted “It’s hot today!”			
Sing	Jane sung “Misty”			T
Teach	Jane taught John how to tie shoelaces			
Learn	Jane learned how to play the piano			
Think	Jane thought about going running		Ponder	T
Help	Jane helped John with his homework		Aid	

			Abet Assist	
Boast	Jane boasted that she has baseball tickets		Brag Gloat	
Rant	Jane ranted about the weather	Disagree	Criticize Protest Complain	
Quote	Jane quoted Ernest Hemingway Jane quoted John's email		Cite	T
Thank	Jane thanked John Jane thanked everybody for attending her birthday	Like		T F
Wink	Jane winked	Like		
Suggest	Jane suggested Gary Dankos		Propose	
Recommend	Jane recommended Gary Dankos	Like Approve	Endorse Promote	T F
Support	Jane supported the Republican party Jane supported John's fundraising effort			
Mute	Jane muted the discussion			

Recreation

Verbs relating to activities, recreation, and social interaction.

Verb	Usage example	Closest equivalent	Alternative synonyms	Votes
Write	Jane wrote a letter Jane wrote a book Jane wrote a screenplay	Author Create		T
Compose	Jane composed an email Jane composed a song Jane composed a photograph	Create		T
Draw	Jane drew a picture of a horse	Create		
Paint	Jane painted a painting of John	Create		
Photograph	Jane photographed the fireworks	Create		T F
Cook	Jane cooked a recipe Jane cooked dinner Jane cooked a cake	Create	Bake	
Post	Jane posted a letter Jane posted a blog post Jane posted to Google+	Author Share	Blog	
Film	Jane filmed a home movie Jane filmed a documentary Jane filmed her children	Create		

Pilot	Jane piloted a plane	Drive		
Sail	Jane sailed a boat Jane sailed on a boat	Drive		
Ski	Jane skied in Aspen			
Run	Jane ran 10 miles Jane ran the London Marathon Jane ran for the bus	Walk Travel		T F
Climb	Jane climbed Mount Diablo			
Swim	Jane swam 30 laps			
Bicycle	Jane bicycled to work Jane bicycled along Skyline			
Dance	Jane danced at the nightclub Jane danced at the wedding Jane danced the tango Jane danced with John			T
Hike	Jane hiked in the Oakland Hills			
Fly	Jane flew to Paris	Travel		T
Surf	Jane surfed in Santa Cruz			
Make	Jane made a birthday card Jane made a dress	Create	Assemble	
Break	Jane broke her laptop Jane broke her car Jane broke John's heart		Disassemble Destroy Damage	
Repair	Jane repaired her laptop Jane repaired her car Jane repaired her relationship with John		Fix Mend Correct	
Eat	Jane ate cheesy puffs Jane ate at Gary Danko's	Consume		T F
Drink	Jane drank a Mohito Jane drank at Bliss Bar	Consume		T F
Order	Jane ordered a drink Jane ordered a pizza Jane ordered a book	Purchase Buy		T F
Bet	Jane bet on John to win the race			
Bid	Jane bid on a camera on eBay			
Donate	Jane donated \$10 to the Red Cross Jane donated clothes to Goodwill	Give Sponsor	Pledge Support	T F
Perform	Jane performed in the musical Jane performed in the band Jane performed a dance	Present	Act	T
Wear	Jane wore her new shoes Jane wore her thick coat Jane wore her skinny jeans		Model	T

Plan	Jane planned her wedding Jane planned a party Jane planned a trip to Paris		Organise Arrange Prepare	F
Celebrate	Jane celebrated her birthday Jane celebrated her promotion Jane celebrated John's promotion			T F
Congratulate	Jane congratulated John	Like Approve	High Five	T F
Reward	Jane rewarded John with a \$10 voucher			
Grow	Jane grew Orchids			
Rest	Jane rested at the weekend Jane relaxed at the spa		Relax	T
Observe	Jane observed the sunset Jane looked at the view of the mountains	View Watch	Look At	
Achieve	Jane achieved her sewing merit badge Jane achieved her fundraising goal Jane achieved her law degree Jane achieved her weight goal	Win	Accomplish Attain	T
Participate	Jane participated in the soccer game Jane participated in the bake off		Compete	F
Race	Jane raced John in the 100m sprint			

Emotions

Verbs relating to emotions, as often expressed on social networks and in other forms of communication.

Verb	Usage example	Closest equivalent	Alternative synonyms	Votes
Feel	Jane felt happy			T F
Laugh	Jane laughed at John's photo	Like		T
Enjoy	Jane enjoyed the movie	Like		
Applaud	Jane applauded John's post	Like		T
Love	Jane loved John's gift Jane loves John	Like		
Kiss	Jane kissed John			
Hug	Jane hugged John			T F
Envy	Jane envied John			
Need	Jane needs to visit Paris Jane needs to buy this hat Jane needs to <any verb> this <any object>	Want		

Productivity and messaging

Verbs relating to modelling user interactions in a productivity or messaging applications.

Verb	Usage example	Closest equivalent	Alternative synonyms	Verbs
Forward	Jane forwarded John's email		Reshare	T
Copy	Jane copied the diagram			
Cut	Jane cut the diagram			
Paste	Jane pasted the diagram			
Undo	Jane undid the change			
Redo	Jane redid the change			
Edit	Jane edited the document			F
Label	Jane labelled the photo	Tag		
Favourite	Jane favourited the article	Tag Like	Bookmark	T
Note	Jane noted the fact			
Print	Jane printed the document			
Lock	Jane locked the file against changes			
Quit	Jane quit the application			
Refresh	Jane refreshed the stock quote			
Report	Jane reported an abusive comment Jane reported a map error			
Unfollow	Jane unfollowed the celebrity on Facebook			T F
Upload	Jane uploaded the video to YouTube			T F
Remind	Jane reminded John to buy milk			
Annotate	Jane annotated the document	Comment		
Collect	Jane added the photo to her collection		Pin	T
Message	Jane messaged John about dinner		Text	
Email	Jane emailed John about dinner			
Call	Jane called John about dinner			F
Broadcast	Jane broadcast her show on YouTube			
Poll	Jane polled her friends about movies			T F
Vote	Jane voted on a movie to see			T F
Publish	Jane published her article on her website	Author		T F

Apps and commerce

Verbs relating to online apps and e-commerce.

Verb	Usage example	Closest equivalent	Alternative synonyms	
Sign-In	Jane signed-in to Foursquare	Log-In		F
Sign-Out	Jane signed-out of Foursquare	Log-out		
Opt-In	Jane opted in to marketing emails			
Opt-Out	Jane opted out of marketing emails			
Tip	Jane tipped the driver \$10 Jane created a tip about this restaurant			T
Offer	Jane offered a 10% discount			
Redeem	Jane redeemed a 10% discount			T
Refer	Jane referred a friend to Uber			T F
Register	Jane registered with Uber	Log-In		
Consent	Jane consented to use of her user profile	Accept		
Launch	Jane launched a new product			

Movement

Verbs relating to changes in activity or location.

Verb	Usage example	Closest equivalent	Alternative synonyms	
Start	Jane started running the race		Begin	
Stop	Jane stopped reading		End Cease	
Arrive	Jane arrived at the railway station	Check-In		F
Depart	Jane departed the railway station			
Navigate To	Jane navigated to the venue			
Move	Jane moved house Jane made a move in Words with Friends			T

Personal

Verbs relating to personal relationships and status.

Verb	Usage example	Closest equivalent	Alternative synonyms	
Date	Jane dated John			
Break up	Jane broke up with John			
Marry	Jane married John		Wed	F

Divorce	Jane divorced John			
Live	Jane lived in London Jane lived with John		Reside Dwell	
Lend	Jane lent John a book			T

Misc

Verbs that didn't fall into any of the above categories. :)

Verb	Usage example	Closest equivalent	Alternative synonyms	
Predict	Jane predicted the weather		Forecast	
Choose	Jane chose a dress Jane chose a movie		Select Pick	
Intend to	Jane intends to watch the movie Jane intends to buy the book Jane intends to <i><any verb></i> the <i><any object></i>		Plan to	T
Hire	Jane hired John to paint the house Jane hired John as a new engineer		Recruit	

Use cases

Social

- LinkedIn
 - Sam connected to Thor -> BeFriend
 - Sam added a skill to his skillset -> Add
 - Sam endorsed Thor for SAAS -> Assert
 - Sam updated his job title (need to model work and roles)
 - Sam followed Google -> Follow
- Twitter
 - Sam joined Twitter (or signed-up, or registered) -> add RegisterAction?
 - Sam tweeted a tweet
 - Sam retweeted a tweet
 - Sam followed Thor
 - Sam blocked Thor
 - Sam replied to Thor's tweet
 - Sam favourited Thor's tweet
- Instagram
 - Sam logged in to Instagram
 - Sam followed Thor
 - Sam shared a photo
 - Sam liked a photo
 - Sam commented on a photo
 - Sam captioned a photo
 - Sam tagged a photo
 - Sam edited a photo
- Pinterest
 - Sam pinned a photo to his board
 - Sam invited Thor to a group board
 - Sam repined a pin

- Sam liked a pin
- Sam created a board
- Sam deleted a board
- Sam edited a board
- Sam followed Thor
- Sam unfollowed Thor

Media

- YouTube
 - Sam watched a video
 - Sam liked a video
 - Sam followed a person
 - Sam commented on a video
- Fandango
 - Sam bought tickets to a movie
- hulu
 - Sam watched a video
- Netflix
 - Sam watched a video
- Flixster
 - Sam added a movie to his queue
- Shazam
 - Sam discovered a song
- Songza
 - Sam listened to a song
- TuneIn
 - Sam listened to a radio station

Activity

- SportsTracker
 - Sam ran 10 km
- Nike Fuelband
 - Sam burned 10K calories
- Fitbit
 - Sam slept for 10 hours
 - Sam lost 10 kgs

Journalism

- CNN
 - Sam read an article
 - Sam wrote an article
 - Sam reviewed an article
- Washington Post
- ESPN
 - Sam watched a soccer game
 - Sam played a fantasy football game

Games

- Angry Birds
 - Sam achieved a goal
 - Sam played angry birds
 - Sam passed a level (achieved a goal?)
- Words with Friends
 - Sam played with friend a, b
- Farmville
 - Sam invited you to play farmville
- Gran Turismo

- Super Mario

Reviews

- Yelp
 - Sam reviewed a restaurant
- Foodspotting
- Amazon
 - Sam bought a book
 - Sam read a book
 - Sam reviewed a book
- Foursquare
 - Sam checked-in to a restaurant

Commerce

- Amazon
 - Sam bought a book
 - Sam ordered a bed
- eBay
 - Sam bid o an item
- Google Shopping
 - Sam bought items
 - Google shopping delivered the items
- Target

Reservations and events

- OpenTable
 - Sam reserved a restaurant
- StubHub
- Ticketmaster
 - Sam bought a ticket

Blogging

- Quora
 - Sam wrote an article
 - Sam authored an article
 - Sam replied to a question
 - Sam liked a question
- Stack Overflow
 - Sam asked a question
 - Sam replied to a question
 - Sam voted on a question
- Wordpress
- Twitter
 - Sam tweeted
- Tumblr

Travel

- Expedia
 - Sam reserved a hotel
 - Sam rented a car
- Hotels.com
- Priceline
- TripAdvisor

Finance

- Mint
- Quickbooks

Taxonomy

Currently every proposed sub-type is a direct child of the schema.org Action type. This section proposes that the standardized Action sub-types be arranged in a hierarchy, consistent with other schema.org types.

Advantages of adding such structure include:

1. Common properties of related Action sub-types can be defined once in a single parent type.
2. Easier discoverability of the most suitable type for a particular use case (by descending the hierarchy rather than scanning through 100+ types).
3. Enable developers using platforms that require apps to declare the types they support or accept (eg. Google+ app activities) to easily select a set of related types, and simplify the language needed when requesting user consent.
4. Allows the set of types to be extended over time without the list of all types becoming unmanageably large
5. Provides hints as to the expected usage in cases where this may be ambiguous (for example, is QualifyAction to be used when qualifying for an offer, or as a lawyer?).
6. Allows apps that process Actions to 'fall back' to a parent node handler when presented with an action of a type they do not individually support. For example, if CookAction is a child of CreateAction, and Google+ has no stream renderer for a CookAction, it could use the existing renderer for CreateAction as a fallback.

Guiding principles

- Every node and leaf must be a valid verb (so "CommerceAction" would not be allowed, because there is no verb "to commerce").
- Consistent with the rest of schema.org, each verb must be a more specific alternative to it's parent. If you construct a sentence from a particular subject/verb/object combination you should be able to swap out the verb for any of it's parents and get a sentence that is equally true, but less specific. For example, a PaintAction might be a child of CreateAction. "Jane painted a picture" would therefore correctly imply that "Jane created a picture".

Proposed hierarchy

- Action: A past action 'performedBy' a person or organization (i.e. in an active voice); typically performed upon a direct 'object'; sometimes having a receiving 'target' indirectly affected by the action; sometimes 'performedWith' other participants. Specific action sub-type documentation specifies the exact meaning of such roles in each case.
 - TransferAction: The act of transferring physical objects, money or ownership from one location or individual to another. Subclasses are specializations that indicate things like direction (e.g. sending vs receiving), intent (e.g. donating), context (e.g. renting refers to real estate), expectations (e.g. borrowing sets the expectation that the money will eventually be returned) and purpose (e.g. tipping is a very specific form of monetary trade).
 - SendAction: [thor] Dispatch an item or message (the object) for transportation by physical or electronic means
 - DeliverAction: [thor] Transfer ownership of an item (the object) to it's intended recipient at its destination
 - ReturnAction: [thor] Transfer possession of a previously transferred item (the object) back to the original sender
 - ShipAction: [thor] Transport physical goods (the object) by a courier or postal delivery network
 - PickupAction: [thor] Collect a purchased item (the object) from the location of the seller
 - ReceiveAction: [thor] Take delivery of an item or message (the object) that has been transported by physical or electronic means
 - GiveAction: [thor] Transfer ownership of an item or money (the object) to another individual or

organisation

- DonateAction: [thor] Transfer ownership of an item or money (the object) to another individual or organisation without reciprocal compensation in goods or services
- TradeAction:
 - [goto] An act of transferring money from one subject to another.
 - [thor] An exchange of goods or services for monetary compensation
 - BuyAction: [thor] Receive goods or services (the object) in exchange for monetary compensation
 - SellAction: [thor] Provide goods or services (the object) in exchange for monetary compensation
 - BorrowAction: [thor] By agreement with the owner take temporary possession of goods (the object) without a transfer of ownership and without monetary compensation
 - RentAction: [thor] Take temporary possession of goods (the object) without a transfer of ownership in exchange for monetary compensation
 - TipAction: [thor] Offer an discretionary monetary reward to the object in appreciation for services rendered
- ManageAction: The act of managing/manipulating objects or targets (containers/collections).
 - EditAction: [thor] Modify a collection or document (the object)
 - AddAction: [thor] Add the object to an unordered collection/group
 - ⊖ AttachAction
 - InsertAction: [thor] Add the object to an ordered collection/list at a specific offset
 - PrependAction: [thor] Add the object as the first item of an ordered collection/list
 - AppendAction: [thor] Add the object as the last item of an ordered collection/list
 - RemoveAction:
 - DeleteAction
 - ReplaceAction
 - ReorderAction
 - SelectAction: Identify the object as the subject of a future action
 - SaveAction: [thor] Preserve the state of the object in ~~permanent storage~~
 - AccessAction
 - OpenAction:
 - CloseAction
 - LogInAction
 - LogOutAction
 - RegisterAction
 - UnregisterAction
 - AssignAction
 - AuthorizeAction
 - InstallAction
 - CancelAction: cancelling a task, order, flight, event, changes state of the object to "not-happening"
 - ConfirmAction
 - CreateAction: The act of creating/producing/synthesizing an object.
 - CommentAction: [thor] Compose a written commentary on the object, or participate in a written discussion about the object
 - AuthorAction: [thor] Compose a written work about the object as the primary or only contributor
 - WriteAction: [thor] Compose a written work about the object
 - BuildAction: [thor] Construct a physical object from constituent parts
 - PhotographAction: [thor] Take a photographic image of the object using camera hardware
 - ReviewAction: [thor] Produce a balanced opinion about the object for an audience
 - InviteAction: [thor] Offer the object the opportunity to attend an event
 - ReserveAction:
 - ScheduleAction:

- OrderAction:
 - CookAction: [thor] Prepare a food recipe (the object) for consumption
 - GrillAction
 - BakeAction
 - ShareAction
- AssertAction: The act of asserting/declaring/affirming one's opinion, reaction or sentiment.
 - ReactAction: Respond instinctively and emotionally to the object
 - AgreeAction: Express a consistency of opinion with the object
 - LikeAction: Express a positive sentiment about the object
 - WantAction: Express a desire about the object
 - DisagreeAction: Express a difference of opinion with the object
 - DislikeAction: Express a negative sentiment about the object
 - IgnoreAction: Intentionally disregard the object
 - ReviewAction: Produce a balanced opinion about the object for an audience
 - RateAction: Produce a quantified opinion about the object for an audience
 - Recommend: Produce a positive endorsement of the object for an audience
 - VoteAction: Express a preference from a constrained/fixed/structured set of choices/options
- CommunicateAction: The act of communicating with another subject.
 - TalkAction
 - CallAction: [thor] Place an audio or video call to the object
 - TextAction
 - EmailAction: [thor] Send an email to the object
 - AskAction: [thor] Pose a question to the object; result = the question
 - ReplyAction: [thor] Respond to a question/message posed/sent by the object; result = the response
 - RsvpAction: [thor] Response to an invitation to attend an event
 - BragAction: [thor]
 - RantAction
- PlayAction: The act of playing something for leisure, fun or competition.
 - CompeteAction: [thor] Engage in a game or sport with other players that will be of finite length, and result in a win, lose, or draw for the actor or their team
 - RelaxAction: [thor] Deliberately disengage from activity in the interests of leisure and recuperation
 - RestAction
 - SwimAction: [thor] Swim competitively or for leisure
 - BikeAction: [thor] Cycle competitively or for leisure
 - SailAction: [thor] Sail competitively or for leisure
 - ClimbAction:
- ExerciseAction: The act of doing physical activities.
 - RunAction: [thor] Run non-competitively to improve personal health
 - BikeAction: [thor] Cycle non-competitively to improve personal health
 - WalkAction: [thor] Walk non-competitively to improve personal health
 - SwimAction: [thor] Swim non-competitively to improve personal health
 - SailAction
 - ClimbAction
- TravelAction: The act of traveling/commuting/moving from one place to another.
 - DriveAction: [thor] Travel by motor vehicle
 - WalkAction: [thor] Travel by foot
 - BikeAction: [thor] Travel by bicycle
 - SailAction: [thor] Travel by boat (including engine powered boats)
 - FlyAction: [thor] Travel by aeroplane, glider, or lighter than air vehicle

- ConsumeAction: The act of consuming something.
 - ReadAction: [thor] Read written prose for education or leisure
 - WatchAction: [thor] Watch audiovisual entertainment, such as a TV program, movie, theatre production, or performing arts
 - ListenAction: [thor] Listen to audio only entertainment, such as a music recording, radio station, or audio book
 - EatAction: [thor] Ingest food
 - DrinkAction: [thor] Ingest beverages
 - DownloadAction
- AtAction: The act of interacting with a geographical location or place
 - CheckInAction: [thor] Arrive at a specific business, establishment, or point of interest
 - AttendAction: [thor] Join an online or in-person event hosted by another person or organisation, such as a concert, party, or class
 - HostAction: [thor] Host an online or in-person event for the benefit of others
 - CheckOutAction: [thor] Depart from a specific business, establishment, or point of interest
- SocializeAction: The act of interacting with another human being
 - FollowAction: [thor] Form a unidirectional/asymmetric social connection with the object
 - BefriendAction: [thor] Form a mutual/bidirectional/symmetric social connection with the object
 - KissAction: [thor] Give the object a kiss
 - LoveAction: [thor] Express love for the object
 - HugAction: [thor] Give the object a hug
 - MarryAction
 - EngageAction
 - DivorceAction
 - DateAction
 - BreakUpAction
- AchieveAction: The act of accomplishing/achieving something.
 - WinAction: [thor] Achieve victory in a competitive activity (the object)
 - LoseAction: [thor] Fail to achieve victory in a competitive activity (the object)
 - TieAction: [thor] End a competitive activity with no participant achieving victory (the object)
 - MarryAction:
 - EngageAction
 - DivorceAction
 - DateAction
 - BreakUpAction
- SearchAction: The act of searching for something.
- DiscoverAction: Happen upon an object of interest serendipitously
 - FindAction: Successfully locate an object that the agent has been searching for

Pending questions (from Thor)

- What is the logic behind defining properties for some types but not others. eg. why does ArchiveAction not have an archived^{object}(Thing) property?
- Why does BuyAction have a set of defined properties, but neither PurchaseAction nor SellAction do so?
- Why is the target of a BuyAction the recipient? The recipient (eg. the buyer) is implicitly the user generating the action (as with all other verbs). Or are we attempting to model user A buying something for user B (in which case surely this is better modelled as a BuyAction followed by a GiveAction?).
- What is the intended use case for PickupAction? Is it for use when collecting goods (rather than having them delivered)? eg. a Pizza.
- Why does rsvpAction need a guest property? The guest is implicitly the user generating the action.

- Is it desirable that the event is the object of an RsvpAction, but the target of an InviteAction?
- Should HostAction, ScheduleAction, AttendAction (and possibly LeaveAction and JoinAction) also have an event property?
- Should we use 'bringingChildren' rather than 'bringingKids' (as 'kids' is somewhat colloquial)?
- Should we use 'bringingAdults' rather than 'bringingOthers' to avoid confusion as to whether 'bringingOthers' includes children?
- What is an AtAction, and why do we need it when we have VisitAction and CheckInAction? (NB. unlike every other action, ["at" is not a verb](#) in the English language).
- IMHO the property 'course' of DriveAction would be better named 'route'.
- IMHO the property 'source' of DriveAction would be better named 'origin' (which, FWIW, would be [consistent with the Maps API](#))
- Why is the property 'averageSpeed' of DriveAction type Text rather than Number? Is it purely so that we can define the units? If so, we should define a new Speed subtype of [schema.org/Quantity](#).
- Why does DriveAction have all this defined structure and WalkAction has none?
- By constraining the listenedTo property of ListenAction to MusicRecording or AudioObject we are excluding use with MusicVideo, MusicPlaylist, MusicAlbum, and MusicEvent. Is that desirable?
- What's the intended use cases for QualifyAction and RetractAction? I guessed they relate to Offers, but it was just a guess..
- The sessionLength property of LogoutAction should be of type [schema.org/Duration](#)
- What's the distinction between searchAction, findAction, and DiscoverAction?
 - Strawman (from Fabian):
 - SearchAction - the act of searching (which may or may not find anything)
 - FindAction - the act of finding something you were searching for (that you knew existed)
 - DiscoverAction - the act of finding something serendipitously (ie. that you were not explicitly looking for and did not know existed)
- Why does searchAction have a query, while findAction does not?

Thor's revised proposal (July 17th)

Thing

- Action
 - AchieveAction
 - LoseAction
 - TieAction
 - WinAction
 - AssertAction
 - IgnoreAction
 - ReactAction: instinctive, reacting in isolation
 - AgreeAction
 - DisagreeAction
 - DislikeAction
 - LikeAction
 - WantAction
 - ReviewAction: deliberate
 - RateAction
 - ChooseAction: a deliberate assertion, not instinctive, reaction in comparison
 - VoteAction: collective reaction/comparison, participating in a group decision
 - ConsumeAction (use too?)
 - UseAction
 - WearAction
 - BurnAction
 - Ingest
 - DrinkAction
 - EatAction
 - Perceive
 - ListenAction

- ReadAction
 - SmellAction
 - HearAction
 - WatchAction
- CreateAction
 - ~~DesignAction: results in an artistic/creative result?~~
 - CookAction
 - DrawAction
 - FilmAction
 - PaintAction
 - PhotographAction
 - AuthorAction
 - Build/Assemble: results in a concrete result?
- DiscoverAction
- ManageAction
 - AcceptAction
 - AssignAction
 - AuthorizeAction
 - BookmarkAction
 - RegisterAction
 - RejectAction
 - SaveAction
 - ScheduleAction: the act of assigning a task/future activity/action start / time frame an object?
 - Reserve?: placing a hold of an object in a time slot
 - SelectAction
 - UnRegisterAction
 - Cancel: the act of cancelling the “happening”/”existence”/”validity” of an object?
 - Join: an event, a service (NOT a party nor a hotel, i.e. you Arrive)
 - Leave
- ModifyAction
 - AddAction
 - InsertAction
 - AppendAction
 - PrependAction
 - DeleteAction
 - ReplaceAction
- MoveAction/BeAtAction?/GoToAction?/TravelAction?/
 - ArriveAction
 - DepartAction
 - TravelAction -> instrument:TravelMode
- TransferAction
 - BorrowAction
 - GiveAction
 - LendAction
 - ReceiveAction
 - ReturnAction
 - SendAction
 - TakeAction
- TradeAction (or TransactAction)
 - BuyAction
 - RentAction
 - SellAction
 - TipAction
 - DonateAction
 - RedeemAction
- PlayAction -> activity/sport enum {BIKING, BASEBALL, SOCCER, SURF, VIDEO_GAME, ACTING, SINGING, etc}

- CompeteAction
 - ExerciseAction
 - PerformAction
 - RelaxAction
 - SearchAction
 - InteractAction: the interaction between two or more human beings / corporations / organizations.
 - BefriendAction
 - FollowAction
 - JoinAction
 - MarryAction
 - CommunicateAction -> instrument:CommunicationMedium
 - AskAction
 - InviteAction
 - ReplyAction
 - ShareAction
 - Greet: say "hello" when you meet
 - ThankAction
 - CongratulateAction
 - CommentAction
 - Inform: one way quick communication, you are not expecting an interaction/reply
 - ⊖ ~~Cancel:communicating hte cancellation of a future event~~
 - Confirm:communicating the existance/veracity/happening of a future event
 - Rsvp: a canceling/confirming your attendance of the party/event
 - HugAction
 - KissAction
- Activity
 - Sport
 - Athletics
 - Baseball
 - Basketball
 - Bowling
 - Cricket
 - Golf
 - Hockey
 - IceHockey
 - MotorRacing
 - Running
 - Rugby
 - Sailing
 - Skiing
 - Soccer
 - Surfing
 - Swimming
 - Tennis
 - PerformanceArt
 - Sing
 - Act
 - Dance
 - PlayMusic
 - VideoGaming
- TransportMode
 - Car
 - Bicycle
 - OnFoot
 - Boat
 - Train

- Aeroplane
- Subway
- Tram
- CommunicationMedium
 - Chat (over IM, SMS, etc.)
 - Fax
 - Email
 - Talk (in person)
 - Videocall
 - Voicecall
 - Voicemail